UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the fiscal year ended December 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to

Commission file number: **001-33137**

EMERGENT

EMERGENT BIOSOLUTIONS INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**14-1902018**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*

400 Professional Drive, Suite 400		
(Address of Principal Executive Offices)		
Gaithersburg,	**MD**	**20879**
(City)	(State)	(Zip Code)

Registrant's Telephone Number, Including Area Code: (240) 631-3200

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	*Trading Symbol(s)*	*Name of Each Exchange on Which Registered*
Common stock, $0.001 par value per share	**EBS**	**New York Stock Exchange**

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "non-accelerated filer", "smaller reporting company" and “emerging growth company” in Rule 12b-2 of the Exchange Act.

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting company ☐ Emerging growth company ☐

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. Yes ☒ No ☐

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ☐ No ☒

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant as of June 30, 2022 was approximately $1.5 billion based on the price at which the registrant's common stock was last sold on that date as reported on the New York Stock Exchange.

As of February 22, 2023, the registrant had 50,140,158 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its 2023 annual meeting of stockholders which is expected to be filed with the Securities and Exchange Commission not later than 120 days after the end of the registrant's fiscal year ended December 31, 2022, are incorporated by reference into Part III of this Annual Report on Form 10-K. With the exception of the portions of the registrant's definitive proxy statement for its 2023 annual meeting of stockholders that are expressly incorporated by reference into this Annual Report on Form 10-K, such proxy statement shall not be deemed filed as part of this Annual Report on Form 10-K.

EMERGENT BIOSOLUTIONS INC.
ANNUAL REPORT ON FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2022

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CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K and the documents we incorporate by reference include forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements, other than statements of historical fact, including statements regarding the future performance of Emergent BioSolutions Inc. or any of our businesses, our business strategy, future operations, future financial position, future revenues and earnings, projected costs, prospects, plans and objectives of management and the ongoing impact of the Coronavirus Disease 2019 ("COVID-19") pandemic, are forward-looking statements. We generally identify forward-looking statements by using words like "anticipate," "believe," "continue," "could," "estimate," "expect," "forecast," "goal," "intend," "may," "plan," should," "will," "would," and similar expressions or variations thereof, the negative thereof, but these terms are not the exclusive means of identifying such statements. These forward-looking statements are based on our current intentions, beliefs and expectations regarding future events. We cannot guarantee that any forward-looking statement will be accurate. You should realize that if underlying assumptions prove inaccurate or unknown risks or uncertainties materialize, actual results could differ materially from our expectations. You are, therefore, cautioned not to place undue reliance on any forward-looking statement. Any forward-looking statement speaks only as of the date on which such statement is made and, except as required by law, we do not undertake to update any forward-looking statement to reflect new information, events or circumstances.

There are a number of important factors that could cause our actual results to differ materially from those indicated by such forward-looking statements, including, among others:

- the availability of U.S. Government ("USG") funding for contracts related to procurement of our medical countermeasures, including AV7909 (Anthrax Vaccine Adsorbed (AVA), Adjuvanted), BioThrax® (Anthrax Vaccine Adsorbed) and ACAM2000® (Smallpox (Vaccinia) Vaccine, Live) among others, as well as contracts related to development of medical countermeasures;
- our ability to meet our commitments to quality and compliance in all of our manufacturing operations;
- our ability to negotiate additional USG procurement or follow-on contracts for our medical countermeasures ("MCM") products that have expired or will be expiring;
- failure to obtain, or delays in obtaining, approval by the U.S. Food and Drug Administration ("FDA") of NARCAN®(naloxone HCl) Nasal Spray for over-the-counter use;
- the impact of a generic marketplace on NARCAN® (naloxone HCl) Nasal Spray and future NARCAN sales;
- our ability to perform under our contracts with the USG, including the timing of and specifications relating to deliveries;
- our ability to provide contract development and manufacturing ("CDMO") services for the development and/or manufacture of product and/or product candidates of our customers at required levels and on required timelines;
- the ability of our contractors and suppliers to maintain compliance with current good manufacturing practices and other regulatory obligations;
- our ability to negotiate new CDMO contracts and the negotiation of further commitments related to the collaboration and deployment of capacity toward future commercial manufacturing under our existing CDMO contracts;
- our ability to collect reimbursement for raw materials and payment of service fees from our CDMO customers;
- the results of pending shareholder litigation and government investigations and their potential impact on our business;
- our ability to comply with the operating and financial covenants required by our senior secured credit facilities ("Senior Secured Credit Facilities") and the amended and restated credit agreement related to such facilities (as amended, the "Credit Agreement") and our 3.875% Senior Unsecured Notes due 2028 ("Senior Unsecured Notes");
- our ability to refinance our Senior Secured Credit Facilities prior to their maturity in October 2023;
- the procurement of our product candidates by USG entities under regulatory authorities that permit government procurement of certain medical products prior to FDA marketing authorization, and corresponding procurement by government entities outside of the U.S.;
- the full impact of the COVID-19 pandemic on our markets, operations and employees as well as those of our customers and suppliers;
- the impact on our revenues from and duration of declines in sales of our vaccine products that target travelers due to the reduction of international travel caused by the COVID-19 pandemic;

- the ability of the Company and Bavarian Nordic to consummate the transactions contemplated under the Purchase and Sale Agreement (the "Sale Agreement") pursuant to which we agreed to sell our travel health business, to meet expectations regarding the conditions, timing and completion of the transactions, and to realize the potential benefits of the transactions;
- the impact of the organizational changes we announced in January 2023;
- our ability to identify and acquire companies, businesses, products or product candidates that satisfy our selection criteria;
- the success of our commercialization, marketing and manufacturing capabilities and strategy; and
- the accuracy of our estimates regarding future revenues, expenses, capital requirements and needs for additional financing.

The foregoing sets forth many, but not all, of the factors that could cause actual results to differ from our expectations in any forward-looking statement. When evaluating our forward-looking statements, you should consider this cautionary statement along with the risk factors identified in the sections entitled “Risk Factor Summary,” “Risk Factors” in Part I, Item 1A of this Annual Report on Form 10-K and the risk factors identified in our other periodic reports filed with the SEC when evaluating our forward-looking statements. New factors emerge from time to time, and it is not possible for management to predict all such factors, nor can it assess the impact of any such factor on the business or the extent to which any factor, or combination of factors, may cause results to differ materially from those contained in any forward-looking statement.

NOTE REGARDING COMPANY REFERENCES

References in this report to “Emergent,” the “Company,” “we,” “us,” and “our” refer to Emergent BioSolutions Inc. and its consolidated subsidiaries.

NOTE REGARDING TRADENAMES

Emergent®, BioThrax®, BaciThrax®, RSDL®, BAT®, Trobigard®, Anthrasil®, CNJ-016®, ACAM2000®, Vivotif®, Vaxchora®, NARCAN®, TEMBEXA® and any and all Emergent BioSolutions Inc. brands, products, services and feature names, logos and slogans are trademarks or registered trademarks of Emergent BioSolutions Inc. or its subsidiaries in the United States or other countries. All other brands, products, services and feature names or trademarks are the property of their respective owners.

PART I

ITEM 1. BUSINESS

OVERVIEW

We are a global life sciences company focused on providing innovative preparedness and response solutions addressing accidental, deliberate and naturally occurring public health threats ("PHTs"). Our solutions include a product portfolio, a product development portfolio, and a contract development and manufacturing ("CDMO") services portfolio. The types of PHTs we are currently addressing are focused on the following five categories:

- chemical, biological, radiological, nuclear and explosives ("CBRNE");
- emerging infectious diseases ("EID");
- travel health, which we have agreed to sell to Bavarian Nordic, as described below;
- public health crises (such as the opioid crisis and the Coronavirus Disease 2019 ("COVID-19") pandemic); and
- acute, emergency, and community care.

Our revenues are derived from a combination of the sale and procurement of our product/product candidate portfolio (described below), the provision of our CDMO services to external customers, and non-dilutive contract and grant funding for research and development ("R&D") projects from various third-party sources.

OUR OPERATING SEGMENTS

Beginning in 2022, we report financial results for our business under the following two operating segments:

- our Products Segment consisting of Government - MCM and Commercial products; and
- our Services Segment consisting of our CDMO services portfolio.

Additionally, we have a centralized R&D organization and an enterprise-wide governance approach to managing our portfolio of R&D projects.

Products Segment

Government - MCM Products

Our Government - MCM business focuses primarily on procurement of MCM products and procured product candidates by domestic and international government customers, with an emphasis on the United States ("U.S.") Government ("USG"), which is our largest customer. We also sell MCM products and procured product candidates to domestic and international non-government organizations and to governments outside of the U.S.

Commercial Products

In the U.S. and international markets, our Commercial business primarily focuses on sales of NARCAN® (naloxone HCI) Nasal Spray and our travelers' vaccines. NARCAN® Nasal Spray is sold commercially through physician-directed or standing order prescriptions at retail pharmacies and to state and local governments and first responders including police, firefighters and emergency medical teams. Our travelers' vaccines include Vaxchora® (Cholera Vaccine, Live, Oral) and Vivotif® (Typhoid Vaccine Live Oral Ty21a), which are approved for use in the U.S. and other territories, and are sold primarily to travel clinics, retail pharmacies, vaccination centers, health departments, and integrated hospital networks.

On February 15, 2023, we entered into the Sale Agreement with Bavarian Nordic, under which we agreed to sell our travel health business, including rights to Vaxchora and Vivotif, as well as our development-stage chikungunya vaccine candidate CHIKV VLP, our manufacturing site in Bern, Switzerland and certain of our development facilities in San Diego, California for a cash purchase price of $270.0 million, subject to certain customary adjustments. In addition, we may receive milestone payments of up to $80.0 million related to the development of CHIKV VLP and receipt of marketing approval and authorization in the U.S. and Europe, and sales-based milestones payments of up to $30.0 million based on aggregate net sales of Vaxchora and Vivotif in calendar year 2026. Approximately 280 employees are expected to join Bavarian Nordic as part of the transaction.

The transaction is expected to close in the second quarter of 2023, subject to certain customary closing conditions, including (1) the expiration or earlier termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, (2) receipt of required clearances and approvals under Spain's competition laws, (3) receipt of certain Swiss real property approvals, (4) no material adverse effect having occurred with respect to the business, and (5) certain other customary conditions.

Services Segment

CDMO Services

Our portfolio of CDMO services consists of three distinct but interrelated service pillars: development services (process and analytical development); drug substance manufacturing; and drug product manufacturing (fill/finish). These services, which we collectively refer to as a "molecule-to-market" offering, employ diverse technology platforms across a network of development and manufacturing sites operated by us. These CDMO services support all phases of the drug development life cycle, from pre-clinical development programs through commercial manufacturing of approved pharmaceutical products. The customer base for CDMO services is primarily innovators in the biotechnology and pharmaceutical segments.

OUR STRATEGY

In second half of 2022, we conducted an evaluation of our corporate performance relative to our 2020-2024 Strategic Plan and of changes to the external environment in which the Company operates. We decided to replace the 2020-2024 Strategic Plan with a new three-year strategy (2023-2025). Our management believes this three-year plan is necessary to strengthen the Company's financial position and adapt to new strategic priorities. We expect that this strategy will refocus the business and increase the Company's ability to make more aggressive investments for future growth.

For 2023-2025, our priorities will align with a sharpened focus on:

MCMs and Commercial Products — We will focus on products including NARCAN Nasal Spray and on public health preparedness and response, which will leverage our longstanding relationship as a reliable partner to the U.S. and allied governments helping protect against chemical, biological and man-made threats.

Contract Development and Manufacturing Services — We will focus our investments in our existing network of manufacturing sites to strengthen operational, quality, and compliance systems across the enterprise to provide reliable delivery of products and services for both our own products and those of our CDMO customers.

Align R&D Portfolio to focus on areas of leadership — We will continue to focus on advancing our pipeline of vaccines and therapeutic product candidates, with the aim of developing differentiated products that address unmet needs in the PHT space. We fund our pipeline development by investing our own funds and through securing government contracts, grants, or other non-dilutive funding.

PRIMARY PRODUCTS AND PRODUCT CANDIDATES

Government - MCM Products

The current portfolio of our Government - MCM business consists of the following products:

GOVERNMENT - MCM PRODUCTS		
Product	**Indication(s)**	**Regulatory Approvals, Licensures or Clearances**
ACAM2000®, (Smallpox (Vaccinia) Vaccine, Live)	Vaccine for active immunization against smallpox disease for persons determined to be at high risk for smallpox infection.	United States, Australia, Singapore
Anthrasil® [Anthrax Immune Globulin Intravenous (Human)]	Treatment of inhalational anthrax in adult and pediatric patients in combination with appropriate antibacterial drugs.	United States, Canada
BAT® [Botulism Antitoxin Heptavalent (A,B,C,D,E,F,G)-(Equine)]	Treatment of symptomatic botulism following documented or suspected exposure to botulinum neurotoxin serotypes A, B, C, D, E, F, or G in adults and pediatric patients.	United States, Canada, Ukraine, Singapore
BioThrax® (Anthrax Vaccine Adsorbed)	Vaccine for active immunization for the prevention of disease caused by *Bacillus anthracis* in persons 18 through 65 years of age. BioThrax is approved for: 1. Pre-exposure prophylaxis of disease in persons at high risk of exposure. 2. Post-exposure prophylaxis of disease following suspected or confirmed *Bacillus anthracis* exposure, when administered in conjunction with recommended antibacterial drugs.	United States, Canada, France (where it is known as BaciThrax®), Germany, Italy, the Netherlands, Poland, Singapore and UK
Ebanga™ (Ansuvimab-zykl), a monoclonal antibody	Treatment of infection caused by *Zaire ebolavirus* in adult and pediatric patients, including neonates born to a mother who is RT-PCR positive for *Zaire ebolavirus* infection.	United States
Raxibacumab injection, a fully human monoclonal antibody	Treatment of adult and pediatric patients with inhalational anthrax due to *Bacillus anthracis* in combination with appropriate antibacterial drugs and for prophylaxis of inhalational anthrax when alternative therapies are not available or are not appropriate.	United States
RSDL® (Reactive Skin Decontamination Lotion Kit)	Intended to remove or neutralize chemical warfare agents and T-2 Toxin from the skin.	United States (510k), Australia, Canada, European Union and Israel
TEMBEXA® (brincidofovir), oral antiviral	Treatment of human smallpox disease caused by variola virus in adult and pediatric patients, including neonates.	United States
Trobigard® Auto-injector atropine sulfate, obidoxime chloride auto-injector	Indicated for the emergency treatment of known or suspected exposure to nerve agents or toxic organophosphates in adults > 18 years of age.	Belgium*
VIGIV CNJ-016® [Vaccinia Immune Globulin Intravenous (Human)]	Treatment of complications due to vaccinia vaccination, including: • Eczema vaccinatum • Progressive vaccinia; • Severe generalized vaccinia; • Vaccinia infections in individuals who have skin conditions; and • Aberrant infections induced by vaccinia virus (except in cases of isolated keratitis). VIGIV is not indicated for postvaccinial encephalitis.	United States, Canada
**TROBIGARD® is not approved by the* U.S. Food and Drug Administration ("FDA"). *It is only approved by the Belgian Health Authority but has been procured by various government entities for emergency preparedness purposes.*		

Description of MCM Products

ACAM2000®. ACAM2000 vaccine is a smallpox vaccine licensed by the FDA and comprises the largest percentage of the current USG stockpile in the Strategic National Stockpile ("SNS") designated for use in a bioterrorism emergency. ACAM2000 vaccine is currently stockpiled both in the U.S. and internationally. Smallpox is a highly contagious disease caused by the Variola virus. According to the Centers for Disease Control and Prevention ("CDC"), smallpox is a devastating disease, with a mortality rate as high as 30%. The vaccine stimulates a person's immune system to develop antibodies and cells in the blood and elsewhere that can then help the body fight off a smallpox infection if exposure to smallpox occurs. On September 3, 2019, we announced the award by the USG of a contract valued at up to approximately $2 billion over 10 years for the continued supply of ACAM2000 vaccine into the SNS, assuming all contract options are exercised. This multiple-year contract is intended to support the replacement of the smallpox vaccine stockpile and included a one-year base period of performance in 2019 valued at approximately $170.0 million, and nine option years. The number of doses under the base period were delivered by year end 2019. On May 28, 2020, we announced the exercise by the U.S. Department of Health and Human Services ("HHS") of the first contract option, valued at $176.0 million, to procure doses of ACAM2000 vaccine. The number of doses under the first contract option were delivered by year end 2020. On July 13, 2021, we announced the exercise by HHS of the second contract option, valued at $182.2 million, to procure doses of ACAM2000 vaccine. We completed the delivery of all ACAM2000 doses in 2022. The USG chose to not exercise its option year in 2022. Therefore, we are currently in discussions with HHS regarding future procurement of ACAM2000 vaccine and what is necessary for the USG to maintain ACAM2000 in the SNS. The actual number of ACAM2000 doses to be procured in the future are subject to the outcome of our discussions.

Anthrasil®. Anthrasil [Anthrax Immune Globulin Intravenous (Human)] ("Anthrasil Anthrax IGIV") is the only polyclonal antibody therapeutic licensed by the FDA for the treatment of inhalational anthrax in adult and pediatric patients in combination with appropriate antibacterial drugs. We currently have two contracts with HHS for Anthrasil Anthrax IGIV: a development and procurement contract that expires in September 2023, and a multiple award, indefinite delivery/indefinite quantity contract for the collection of anti-anthrax plasma, as well as the manufacture of such plasma into bulk drug substance and finished drug product and delivery of finished product into the SNS. This contract covers extended plasma storage, and the options for manufacturing and product delivery, which are available to be exercised by HHS through September 2023. In addition to domestic USG sales, Anthrasil Anthrax IGIV has been sold to several foreign governments, including the Canadian government.

BAT®. BAT antitoxin is the only equine plasma antitoxin licensed by the FDA and Health Canada for the treatment of all seven botulinum neurotoxin serotypes. BAT antitoxin is licensed by the FDA for the treatment of symptomatic botulism following suspected or documented exposure to botulinum neurotoxin serotypes A, B, C, D, E, F or G in adults and pediatric patients. It is also licensed in Canada pursuant to Health Canada’s Extraordinary Use New Drugs regulations. BAT antitoxin is the only heptavalent botulism antitoxin available in the U.S. and Canada for treating naturally occurring botulism in adults or pediatric patients. Botulinum toxin is a nerve toxin produced by the bacterium Clostridium botulinum that causes botulism, a serious paralytic illness. On May 8, 2020, we announced the finalization of a previously announced contract with HHS, valued at up to $550.0 million, if all options under the contract are exercised. The contract has two deliverables. The first deliverable, negotiated in September 2019 and valued at up to approximately $90.0 million, is to supply annual doses of BAT antitoxin into the SNS for 10 years by converting existing bulk drug substance into final drug product. This deliverable also includes options for additional doses valued at up to approximately $94.0 million over 10 years. The second deliverable, valued at up to approximately $366.0 million, is for the production of additional doses of bulk drug substance over 10 years to maintain the plasma collection and production capability for botulism response planning. In addition to domestic government sales, BAT antitoxin continues to be sold internationally, with deliveries to over 17 foreign governments in 2022.

BioThrax®. BioThrax vaccine is the only vaccine licensed by the FDA for pre-exposure prophylaxis of anthrax disease in persons at high risk of exposure. BioThrax vaccine is also approved by the FDA for post-exposure prophylaxis administration in combination with antimicrobial therapy in the event of suspected or confirmed exposure to *Bacillus anthracis*. Anthrax is a potentially fatal disease caused by the spore-forming bacterium, *Bacillus anthracis*. Inhalational anthrax is the most lethal form of anthrax. In the U.S., BioThrax vaccine is administered in a pre-exposure prophylaxis setting by intramuscular injection as a three-dose primary series over a six-month period. Per the U.S. label, booster doses are administered six and 12 months after completion of the primary series and at 12- month intervals thereafter. BioThrax vaccine is administered in a post-exposure prophylaxis setting as three subcutaneous injections two weeks apart in conjunction with recommended antibacterial drugs following suspected or confirmed *Bacillus anthracis* exposure. When we report the revenue associated with “anthrax vaccines,” it reflects the combined revenue from the procurement and sale of BioThrax vaccine as well as the product candidate AV7909 (described below).

In December 2016, we signed a follow-on contract with the CDC for the supply of up to approximately 29.4 million doses of BioThrax vaccine for delivery into the SNS, over a five-year period ending in September 2021. On September 29, 2021, we were granted a no-cost contract extension, which extended the date through which the USG procured BioThrax vaccine to March 31, 2022. On June 16, 2022, the contract's period of performance was extended to June 30, 2022. All deliveries under this contract were completed in August 2022.

Ebanga™ (Ansuvimab-zykl), a monoclonal antibody. Ebanga™ (Ansuvimab-zykl) is a monoclonal antibody with antiviral activity provided through a single IV infusion (over 60 minutes) for the treatment of Zaire ebolavirus in adult and pediatric patients, including neonates born to a mother who is RT-PCR positive for Zaire ebolavirus. On July 1, 2022, we entered into an agreement with Ridgeback Biotherapeutics (“Ridgeback”) in which the parties agreed to negotiate a Collaboration Agreement to expand the availability of Ebanga™ (Ansuvimab-zykl). We will be responsible for manufacturing, selling and distributing Ebanga™ (Ansuvimab-zykl) in the U.S. and Canada and Ridgeback will serve as the global access partner.

Raxibacumab injection, a fully human monoclonal antibody. Our raxibacumab product is the first fully human monoclonal antibody therapeutic licensed by the FDA for the treatment and prophylaxis of inhalational anthrax due to *Bacillus anthracis*. Our raxibacumab product is indicated for the treatment of adult and pediatric patients with inhalational anthrax in combination with appropriate antibacterial drugs and for prophylaxis of inhalational anthrax when alternative therapies are not available or appropriate.

RSDL®. RSDL kit is cleared by the FDA that is intended to remove or neutralize chemical warfare agents from the skin, including tabun, sarin, soman, cyclohexyl sarin, VR, VX, mustard gas and T-2 toxin. RSDL kit has also been cleared as a medical device by Health Canada, has a current European Conformity ("CE") mark under European Directives, and is licensed by the Israel Ministry of Health and by Australia's Therapeutic Goods Administration. To date, the principal customers for RSDL kits have been agencies of the USG, including the Department of Defense ("DoD") and the National Guard. In addition to the DoD and other USG agencies, beginning in 2017, we made RSDL kit available for the first time for purchase by civilians in the U.S. Our current contract with the DoD awarded in December 2022 is a five-year contract including a base year period and four single year option periods, valued at up to $379.6 million to supply RSDL kits for use by all branches of the U.S. military. We also sold RSDL kits to nine foreign countries outside the U.S. in 2022. In November 2022, a specific batch of our RSDL kits was recalled due to leakage, which could cause the product not to perform as effectively as intended. There have been no reports of injuries or death related to this recall of which we are aware.

TEMBEXA® (brincidofovir). TEMBEXA is the first oral antiviral approved by the FDA for the treatment of smallpox disease caused by variola virus in adult and pediatric patients, including neonates. On September 26, 2022, we acquired exclusive worldwide rights to brincidofovir from Chimerix Inc. for the treatment of any human smallpox disease or any other disease caused by any orthopox virus. Following the acquisition, the 10-year contract with the Biomedical Advanced Research and Development Authority ("BARDA"), valued at up to $680.0 million, to supply up to 1.7 million tablet and suspension formulations of TEMBEXA was novated to the Company.

Trobigard® atropine sulfate, obidoxime chloride auto-injector. TROBIGARD auto-injector was approved by the Federal Agency for Medicines and Health Products of the Belgium Health Authority on February 18, 2021. TROBIGARD auto-injector is not currently approved or cleared by the FDA. TROBIGARD auto-injector is only distributed to authorized government buyers for use outside the U.S. In Belgium, the TROBIGARD auto-injector is indicated for the emergency treatment of known or suspected exposure to nerve agents or toxic organophosphates in adults (> 18 years of age). In February 2019, Emergent was awarded a 10-year contract, valued at up to approximately $100.0 million, by the U.S. Department of State, to procure our TROBIGARD product, training auto-injectors and RSDL kits for emergency use outside of the U.S. The contract consists of a five-year base period of performance with five one-year option periods.

VIGIV CNJ-016®. VIGIV is the only polyclonal antibody therapeutic licensed by the FDA and Health Canada to address certain complications from replicating virus smallpox vaccination. The principal customer for VIGIV is the USG, specifically HHS. In June 2019, we announced a contract award by HHS valued at approximately $535.0 million over 10 years for the continued supply of VIGIV into the SNS for smallpox preparedness. VIGIV has also been procured by a limited number of foreign governments.

Commercial Products

Our current Commercial portfolio consists of the following products:

COMMERCIAL PRODUCTS		
Product	**Indication(s)**	**Regulatory Approvals**
NARCAN®(naloxone HCl) Nasal Spray	Emergency treatment of known or suspected opioid overdose as manifested by respiratory and/or central nervous system depression.	United States, Canada
Vaxchora® (Cholera Vaccine Live Oral)	U.S.: Vaxchora (Cholera Vaccine Live Oral) is a vaccine indicated for active immunization against disease caused by *V. cholerae* serogroup 01 Vaxchora is approved for use in persons two- 64 years of age traveling to cholera-affected areas. EUROPEAN UNION: Vaxchora is indicated for active immunization against disease cause by *V. cholera*e serogroup 01 in adults and children aged two years and older. In February 2023 we agreed to sell Vaxchora as part of the sale of our travel health business to Bavarian Nordic.	United States, European Union
Vivotif® (Typhoid Vaccine Live Oral Ty21a)	For immunization of adults and children greater than 6 years of age against disease caused by *Salmonella typhi.* In February 2023 we agreed to sell Vaxchora as part of the sale of our travel health business to Bavarian Nordic.	United States, Austria, Australia, Belgium, Canada, Czech Republic, Denmark, France, Finland, Germany, Israel, Italy, Luxembourg, Malaysia, the Netherlands, New Zealand, Norway, Poland, Portugal, Slovakia, South Korea, Spain, Sweden, Switzerland and United Kingdom

Description of Commercial Products

NARCAN®. NARCAN Nasal Spray, a product we obtained in connection with our acquisition of Adapt Pharma Inc. in 2018, is an intranasal formulation of naloxone approved by the FDA and Health Canada for the emergency treatment of known or suspected opioid overdose as demonstrated by respiratory and/or central nervous system depression. The primary customers for NARCAN Nasal Spray are state health departments, local law enforcement agencies, community-based organizations, substance abuse centers, federal agencies and consumers through pharmacies fulfilling physician-directed or standing order prescriptions. We completed two important product life cycle improvements in 2020. First, we launched the Generation II NARCAN device, which has a claim for enhanced temperature excursions and storage below 25°C. Second, we gained FDA approval for an extension of the shelf life of NARCAN Nasal Spray from 24 months to 36 months.

In the fourth quarter of 2022, we filed our supplemental New Drug Application (“sNDA”) for NARCAN® (naloxone HCl) Nasal Spray, as an over-the-counter ("OTC") emergency treatment for known or suspected opioid overdose. The FDA accepted the application and also granted Priority Review. If approved, it would be the first 4 mg naloxone nasal spray available OTC in the U.S. The Prescription Drug User Fee Act ("PDUFA") goal date is March 29, 2023. On February, 15, 2023, the U.S. Food and Drug Administration (FDA) Nonprescription Drugs Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee unanimously voted in favor (a total of 19 votes) that the benefit-risk profile of NARCAN® (naloxone HCl) Nasal Spray was supportive of its use as a nonprescription opioid overdose reversal agent. The FDA is not bound by the committees’ guidance but will take its advice into consideration.

Vaxchora®. Vaxchora vaccine is a live attenuated cholera vaccine for oral administration and the first vaccine approved by the FDA for the prevention of cholera infection. Cholera is a potentially life-threatening bacterial infection that occurs in the intestines and causes severe diarrhea and dehydration. It has a low incidence in the U.S. and Europe, but a high incidence in Africa, Southeast Asia, and other locations around the world. These areas have historically drawn travelers

from the U.S. and Europe, so cholera can occur in patients who return to the U.S. or Europe from visits to these regions. Vaxchora vaccine is approved in the U.S. for active immunization against disease caused by *V. cholerae* serogroup 01 in persons two to 64 years of age traveling to cholera-affected areas. Vaxchora vaccine is indicated in the European Union ("EU") for active immunization against disease caused by *V. cholerae* serogroup 01 in adults and children aged two years and older.

We have marketed Vaxchora vaccine to travelers primarily from the U.S. to cholera at-risk destinations. Our sales of Vaxchora vaccine were diminished in 2020 and 2021 due to the broad disruption to travel caused by the COVID-19 pandemic. Vaxchora vaccine was launched in the EU in August 2022. In February 2023, we agreed to sell Vaxchora as part of the sale of our travel health business to Bavarian Nordic.

Vivotif®. Vivotif vaccine is a live attenuated vaccine for oral administration to prevent typhoid fever. Typhoid fever is a potentially severe and occasionally life-threatening febrile illness caused by *Salmonella enterica* serotype *Typhi*, a bacterium that only lives in humans. It is usually acquired by consumption of water or food that has been contaminated by feces of an infected person. Travelers from North America and Europe going to Asia, Africa, and Latin America have historically been particularly at risk. In February 2023 we agreed to sell Vivotif as part of the sale of our travel health business to Bavarian Nordic.

We have marketed Vivotif vaccine to travelers primarily from the U.S. and the EU traveling to at-risk destinations. Our sales of Vivotif vaccine were diminished in 2020 and 2021 due to the broad disruption to travel caused by the COVID-19 pandemic. Sales of Vivotif vaccine resumed in 2022 and we expect that global travel will return to pre-pandemic levels by the end of 2023.

Product Candidates

The table below highlights our current portfolio of product candidates:

PRODUCT CANDIDATES	
Product Candidate	**Target Indication**
AV7909 (Anthrax Vaccine Adsorbed, Adjuvanted)	Post-exposure prophylaxis of disease following suspected or confirmed exposure to *Bacillus anthracis* in persons 18 through 65 years of age when administrated in conjunction with recommended antibacterial drugs (currently procured by the USG under pre-Emergency Use Authorization ("EUA") prior to approval by the FDA and included in revenue for Anthrax Vaccines).
CGRD-001 (Pralidoxime chloride/atropine auto-injector)	Treatment of poisoning by organophosphorus nerve agents or organophosphorus compounds.
CHIKV VLP Chikungunya virus VLP vaccine	Active immunization to prevent disease caused by Chikungunya virus. In February 2023 we agreed to sell CHIKV VLP as part of the sale of our travel health business to Bavarian Nordic.
EBS-LASV (rVSV-vectored vaccine for Lassa fever)	Active immunization to prevent Lassa fever.
EGRD-001 (Diazepam auto-injector)	Adjunct treatment in status epilepticus and severe recurrent convulsive seizures caused by nerve agent poisoning.
SIAN (stabilized isoamyl nitrite)	Antidote for initial treatment of certain or suspected acute cyanide poisoning. Standard of care supportive measures should be applied as appropriate. SIAN is not a substitute for ongoing emergency medical care.
UniFlu (Universal influenza vaccine)	Intended to induce broad and supra-seasonal immunity against influenza A and B viruses.

Description of Product Candidates

AV7909. We are developing AV7909, an anthrax vaccine product candidate based on anthrax vaccine adsorbed combined with an adjuvant for post-exposure prophylaxis of disease following suspected or confirmed exposure to *Bacillus anthracis* in persons 18 through 65 years of age when administered in conjunction with recommended antibacterial drugs. In 2021, AV7909 was granted orphan drug designation by the FDA. Studies have shown that AV7909 elicits a stronger immune response using fewer doses than BioThrax vaccine, which is expected to allow patients to reach a protective level

of immunity more rapidly. AV7909 is designed to provide protection with a two-dose regimen (versus the BioThrax three-dose regimen) for post-exposure prophylaxis of anthrax disease, when administered in combination with the recommended antibacterial drugs. In September 2016, we signed a combination development and procurement contract with BARDA, which included a five-year base period of performance to develop AV7909 for post-exposure prophylaxis of anthrax disease and to deliver to the SNS an initial two million doses, subsequently modified to three million doses in March 2017. The contract also includes procurement options for the delivery of an additional 7.5 million to 50.0 million doses of AV7909 into the SNS and options for an additional clinical study and post marketing commitments. In 2019, we initiated and completed enrollment of a Phase 3 study; the 3,850 subject trial evaluating safety, immunogenicity and lot consistency was completed in 2020. In collaboration with us, the CDC filed with the FDA a pre-EUA submission package related to AV7909. Following this submission, BARDA began procuring AV7909, exercising its first contract option in July 2019 (valued at approximately $261.0 million) to procure doses to be delivered to the SNS through June of 2020, its second contract option in June 2020 (valued at $258.0 million) to procure additional doses of AV7909 for delivery into the SNS over 12 months and, most recently, in September 2021 funding another contract option (valued at approximately $399.0 million) to deliver doses of AV7909 to the SNS over 18 months. In April 2022, we completed our submission of a Biologics License Application ("BLA") for AV7909 to the FDA. When we report the revenue associated with “anthrax vaccines,” it reflects the combined revenue from the procurement and sale of AV7909 as well as BioThrax (described above).

CGRD-001. The CGRD-001 auto-injector is being developed for treatment of poisoning by organophosphorus nerve agents, as well as organophosphorus compounds for use by military personnel. CGRD-001 is being developed as an auto-injector for delivery of 600 mg of pralidoxime and 2 mg of atropine for intramuscular injection following nerve agent exposure. The product is being designed for injection by non-medical personnel, including self-injection or buddy aid by service members. Currently we are manufacturing registration batches and undergoing design verification.

CHIKV VLP. We are developing a chikungunya virus (CHIKV) virus-like particle (VLP) vaccine candidate, CHIKV VLP, to be administered as a single dose for active immunization against chikungunya disease. There is currently no licensed vaccine, VLP or otherwise, to prevent chikungunya virus disease. The structure of the CHIKV VLP vaccine is nearly identical to the wild-type virus but does not pose a risk of replication. Studies conducted by the National Institute of Allergy and Infectious Diseases ("NIAID") Vaccine Research Center and Emergent have shown that the CHIKV VLP vaccine is well-tolerated and elicits high titer neutralizing antibodies, which are needed to protect against chikungunya virus. CHIKV VLP is currently being investigated in two pivotal phase 3 trials. Our CHIKV VLP vaccine candidate received Breakthrough Therapy designation and Fast Track designation from the FDA in October 2020 and May 2018, respectively, and PRIME designation from the European Medicines Agency (EMA) in September 2019. In February 2023, we agreed to sell CHIKV VLP as part of the sale of our travel health business to Bavarian Nordic.

EBS-LASV. This vaccine candidate is a recombinant, vesicular stomatitis virus vectored, monovalent vaccine encoding the surface glycoprotein precursor gene of Lassa virus. The development program is partnered with the Coalition for Epidemic Preparedness Innovations ("CEPI") and is currently in Phase 1 with the trial ongoing in Ghana. CEPI will decide on Phase 2 funding in the second quarter of 2023. A correlate of protection is not yet identified.

EGRD-001. The EGRD-001 auto-injector is being developed for treatment of status epilepticus and severe recurrent convulsive seizures caused by nerve agent poisoning, for use by military personnel and first responders. EGRD-001 is being developed as an auto-injector for the intramuscular delivery of 10 mg of diazepam in individuals who are actively seizing.

SIAN. We are developing SIAN (stabilized Isoamyl nitrate) as an antidote for initial treatment of acute poisoning of cyanide that is judged to be serious or life threatening. The USG consistently identifies cyanide ("CN") as a high-priority threat, most recently in the Public Health Emergency medical Countermeasure Enterprise 2022 Strategy and Implementation Plan. Historically, CN has been used as a chemical warfare agent and could be an agent for a terrorist attack. CN also represents a threat from accidental poisoning, such as industrial accidents or exposure during building fires. The SIAN program is funded by BARDA and is focused on the development of a single-use intranasal spray device that can be rapidly deployed and easily dispensed so that it will deliver SIAN following a cyanide incident or in a mass exposure setting. In 2022, we initiated a Phase 1 study designed to assess the safety, tolerability, pharmacokinetics and pharmacodynamics of our SIAN product candidate.

UniFlu. We are developing a universal influenza vaccine candidate based on a nanoparticle technology involving a cross-reactive hemagglutinin (HA) antigen for active immunization against influenza virus A and B. The nanoparticle technology was developed by and licensed from the NIAID Vaccine Research Center. Using this technology, we are seeking to develop a universal influenza vaccine designed to confer protection against numerous strains and subtypes of influenza virus. In 2021, we initiated a Phase 1 study designed to assess safety, tolerability, and immunogenicity of the influenza virus A

components of the vaccine candidate with future studies planned to investigate additional components, including for full coverage against all influenza virus A and B strains.

Description of Services

CDMO Services. Our CDMO Services are based on our established development and manufacturing infrastructure, technology platforms and expertise, as well as continuing capital expenditure projects to expand our capabilities and increase capacity.

Our CDMO Services consist of development services, bulk drug substance manufacturing, fill, finish, and packaging of final drug product. Collectively, this portfolio of services provides “molecule-to-market” solutions to clients engaged in all stages of drug development and commercialization. These services are provided to innovator biopharmaceutical companies and non-governmental organizations ("NGOs").

We currently have 10 development and manufacturing sites located in the U.S., Canada and Switzerland. These sites allow us to meet our internal manufacturing needs as well as performing services for our external customers. Eight of these sites currently provide CDMO services to customers.

- Our Winnipeg, Gaithersburg and San Diego sites house our development services expertise;
- Our Bayview, Lansing, Winnipeg, San Diego, Bern and Canton sites house our drug substance expertise; and
- Our Camden, Winnipeg, Rockville and Hattiesburg sites house our drug product and packaging expertise.

We currently have over 50 active CDMO customers.

Marketing and Sales

We have dedicated sales channels for each of our products and service offerings.

Government - MCM Products.

We partner with stakeholders in the USG and domestic NGOs to support procurement of our MCM products and procured product candidates.

We also partner with foreign governments and international NGOs to support procurement of MCM products and procured product candidates internationally.

Our specialized team has expertise and experience in the public and private sector, dealing with counter terrorism, CBRNE preparedness and public health.

Commercial Products.

In the U.S. market, NARCAN (naloxone HCl) Nasal Spray is sold directly to state and local governments and used by first responders, including: police, firefighters and emergency medical teams. In addition, NARCAN Nasal Spray is dispensed to patients at risk of an opioid overdose through retail pharmacies as prescribed by a physician. In 2022, we submitted a supplemental New Drug Application (sNDA) requesting that FDA switch Narcan (4mg) from a prescription drug to an over-the-counter medicine. The PDUFA goal date for that application is March 29, 2023. On February, 15, 2023, the U.S. Food and Drug Administration (FDA) Nonprescription Drugs Advisory Committee and the Anesthetic and Analgesic Drug Products Advisory Committee unanimously voted in favor (a total of 19 votes) that the benefit-risk profile of NARCAN® (naloxone HCl) Nasal Spray was supportive of its use as a nonprescription opioid overdose reversal agent. The FDA is not bound by the committees’ guidance but will take its advice into consideration.

Vivotif® and Vaxchora® vaccines are intended for use by travelers heading to regions where there is a risk of exposure to certain infectious diseases and, therefore, are sold to channels that address travel health. We sell to both wholesalers and distributors. The primary commercial customers of Vivotif and Vaxchora vaccines are travel clinics, retail pharmacies, vaccination centers, health departments and integrated hospital networks. Sales of these products were significantly reduced in 2020 and 2021 due to the broader disruption to travel caused by the COVID-19 pandemic. Sales of Vivotif vaccine fully resumed in 2022. Vaxchora vaccine was launched in the EU and sales of Vaxchora vaccine are expected in the first quarter of 2023 in the U.S. We expect sales to be influenced by the continued impact of the COVID-19 pandemic on global travel.

CDMO Services.

We market our CDMO services to the global pharmaceutical and biotechnology industry, governments and NGOs. We also provided CDMO services to the USG, which ended in 2021. Our CDMO services are supported by a dedicated group of professionals qualified to represent the full breadth of our service offerings.

Competition

Our products and any product or product candidate that we acquire or successfully develop and commercialize are likely to compete with current products and product candidates that are in development for the same indications. The competition for our products and product candidates includes the following:

- *ACAM2000®.* ACAM2000 vaccine remains the primary smallpox vaccine stockpiled by the USG and offers key features for public health mass vaccination programs that are critical, including a single dose vaccination schedule and multi-dose vial presentation. ACAM2000 vaccine faces competition from JYNNEOS™ vaccine, which is licensed by the FDA for the prevention of smallpox and mpox disease in adults 18 years of age and older determined to be at high risk for smallpox or mpox infection. JYNNEOS vaccine is also approved in Canada and in the EU under the trade names IMVAMUNE® and IMVANEX®, respectively.
- *AV7909 and BioThrax.* AV7909 and BioThrax vaccines are currently procured, primarily by the USG, for prevention of anthrax disease. BioThrax vaccine is currently the only anthrax vaccine approved by the FDA for prevention of anthrax disease, and AV7909 and BioThrax are the only anthrax vaccines procured by the USG for the SNS to date. We face potential future competition for the supply of anthrax vaccines if the USG chooses to procure alternative products or product candidates. Altimmune, Inc., GC Pharma, Blue Willow Biologics, and Greffex are each currently developing anthrax vaccine product candidates, which are in various stages of clinical development. Of these product candidates, Altimmune and Blue Willow Biologics have completed Phase 1 trials.
- *BAT®.* Our botulinum antitoxin immune globulin product is the only heptavalent antitoxin licensed by the FDA and Health Canada for the treatment of symptomatic botulism for all seven botulinum neurotoxin serotypes. Direct competition is currently limited.
- *CNJ-016®.* Our VIGIV product is the only therapeutic licensed by the FDA and Health Canada to address adverse events from smallpox vaccination with replicating virus smallpox vaccines. While direct competition in terms of the treatment of smallpox vaccination side effects is limited, SIGA has obtained EU approval for TPOXX® (tecovirimat), an oral therapy, for the treatment of complications following vaccination against smallpox. TPOXX is currently procured by the USG for the SNS.
- *Ebanga™ (*Ansuvimab-zykl). A monoclonal antibody therapeutic approved by the FDA in December 2020 for the treatment of infection caused by *Zaire Ebolavirus* in adult and pediatric patients, including neonates born to RT-PCR+ mother for *Zaire Ebolavirus* infection. Ebanga faces competition from another monoclonal antibody, Inmazeb (atoltivimab, maftivimab and odesivimab-ebgn), which was approved by the FDA in October 2020 with the same indication. Inmazeb is currently procured by the USG for the SNS.
- *NARCAN®.* NARCAN Nasal Spray is the first FDA-approved intranasal naloxone spray for the emergency reversal of opioid overdoses. Teva Pharmaceuticals Industries Ltd. and its Canadian affiliate (collectively, Teva) have generic versions of an intranasal naloxone spray based on NARCAN approved by the FDA and Health Canada. Teva launched its generic naloxone nasal spray in the U.S. In 2021 Padagis Pharmaceuticals also has a generic version of an intranasal naloxone spray based on NARCAN approved by the FDA. Padagis launched its generic naloxone nasal spray. NARCAN Nasal Spray also faces branded competition: Kloxxado™ (naloxone HCl) nasal spray 8 mg, a branded product developed by Hikma Pharmaceuticals, Inc., Amphastar Pharmaceuticals, Inc.'s naloxone injection product, Teleflex Medical Inc's Intranasal Mucosal Atomization Device and Zimhi™ (naloxone), a branded injectable product developed by Adamis. In addition, Harm Reduction Therapeutics has announced filing of an OTC NDA application for a 3mg naloxone nasal spray formulation intended for use in opioid overdose reversal. NARCAN may face additional generic and branded competition in the future.

- *Raxibacumab and Anthrasil® [Anthrax Immune Globulin Intravenous (human)].* Our raxibacumab product is the first FDA-licensed fully human anthrax monoclonal antibody therapeutic and Anthrasil [Anthrax Immune Globulin Intravenous (human)] is the only polyclonal antibody therapeutic licensed by the FDA and Health Canada for the treatment of inhalational anthrax in adult and pediatric patients in combination with appropriate antibacterial drugs. Elusys Therapeutics, Inc. has obtained FDA licensure for Anthim® (obiltoxaximab) injection, a chimeric (or partially human) antibody indicated for the treatment and prophylaxis of inhalational anthrax. Obiltoxaximab is also approved in Canada and the EU.
- *RSDL®.* In the U.S., the RSDL Kit is one of only two medical device cleared by the FDA to remove or neutralize chemical warfare agents and T-2 toxin from the skin. Internationally, various Ministries of Defense have procured Fullers Earth, Dutch Powder and French Powder as a preparedness countermeasure for the decontamination of liquid chemical weapons from the skin.
- *TEMBEXA® (brincidofovir).* TEMBEXA is the first oral antiviral approved by the FDA, in June 2021, for all age groups for the treatment of smallpox. TEMBEXA faces competition from TPOXX® (tecovirimat), an oral therapy for the treatment of smallpox disease that was approved by the FDA in July 2018 and is currently procured by the USG for the SNS. TPOXX is also approved in Canada and the EU. In the EU, TPOXX is indicated for the treatment of smallpox, mpox and cowpox, as well as the treatment of complications following vaccination against smallpox.
- *Trobigard® atropine sulfate, obidoxime chloride auto-injector.* In the U.S., Meridian Medical Technologies has been the primary supplier of nerve-agent antidote auto-injectors. The USG has funded the development of a number of nerve agent antidote auto-injectors including development programs at Aktiv Pharma Group, Kaleo and others. Outside of the U.S. there are a number of suppliers of these devices though few with approvals from national or regional regulatory authorities.
- *Vaxchora®.* In the U.S., Vaxchora vaccine is the only FDA-licensed vaccine available indicated to prevent cholera. Vaxchora vaccine is the only single-dose cholera vaccine in the EU and is subject to competition by Valneva's Dukoral® two-dose cholera vaccine in the EU. In February 2023, we agreed to sell Vaxchora as part of the sale of our travel health business to Bavarian Nordic.
- *Vivotif®.* Vivotif vaccine is the only FDA-approved oral typhoid vaccine. In the markets where Vivotif vaccine is licensed, it competes primarily with Sanofi Pasteur's Typhim VI® vaccine, an injectable polysaccharide typhoid vaccine. In February 2023, we agreed to sell Vivotif as part of the sale of our travel health business to Bavarian Nordic.

CDMO Services

We also compete for CDMO services with a number of biopharmaceutical product R&D organizations, contract manufacturers of biopharmaceutical products, other CDMO organizations, and university research laboratories.

Companies with which we compete to provide CDMO services include, among others: Lonza Group Ltd., Catalent, Inc., Thermo Fisher Scientific, Curia Global, Inc., Charles River Laboratories, Avid Bioservices, KBI Biopharma, Vetter Pharma, and FUJIFILM Diosynth Biotechnologies. We also compete with in-house research, development and support service departments of other biopharmaceutical companies.

MANUFACTURING OPERATIONS

Our development and manufacturing network allows us to deploy capabilities and capacity for clinical and commercial supply needs.

Supplies and Raw Materials

We currently rely on contract manufacturers and other third parties to manufacture some of the supplies we require for pre-clinical studies and clinical trials, as well as supplies and raw materials used in the production of our products. Typically, we acquire these supplies and raw materials on a purchase order basis and, when possible, in quantities we believe adequate to meet our needs. We obtain Alhydrogel® adjuvant 2%, used to manufacture AV7909 and BioThrax vaccines, from a single-source supplier for which we currently have no alternative source of supply. However, we maintain stored supplies of this adjuvant in quantities believed to be sufficient to meet our expected manufacturing needs. We also utilize single-source suppliers for other raw materials in our manufacturing processes.

We utilize single source suppliers for all components of NARCAN Nasal Spray. It is manufactured by a third party, which operates a full service offering from formulation to final packaging. Materials for production of NARCAN Nasal Spray, such as the naloxone active pharmaceutical ingredient and other excipients, along with the vial, stopper and device are produced around the world by other third parties and delivered to the primary manufacturer and released to manufacturing following appropriate testing.

We rely on single source suppliers for our plasma collection to support the Anthrasil, VIGIV and BAT programs. We work closely with our suppliers for these specialty programs and operate under long-term agreements. We order quantities of material in advance in quantities believed to be sufficient to meet upcoming demand requirements.

INTELLECTUAL PROPERTY

We actively seek to protect intellectual property related to our assets, including patent rights, trademark rights, trade secrets and proprietary confidential information, through defense and enforcement of existing rights and pursuit of protection on new and arising innovations. The duration of and the type of protection for patent rights depends upon many factors including the type of patent, the scope of its coverage, the availability of regulatory-related extensions or administrative term adjustments, the availability of legal remedies in a particular country, and the validity and enforceability of the patents. We are a party to various license agreements, including those under which we license patents, patent applications, trademarks, materials and other intellectual property rights. It is our policy to ethically consider the enforcement and defense of our intellectual property rights, and to respect the intellectual property rights of others.

REGULATION

Regulations in the U.S. and other countries have a significant impact on our product development, manufacturing and marketing activities.

Government Contracting

Our status as a USG contractor means that we are subject to various statutes and regulations, including:

- the Federal Acquisition Regulation ("FAR") and agency-specific regulations supplemental to FAR, which comprehensively regulate the award, formation, administration and performance of government contracts;
- the Defense Federal Acquisition Regulations ("DFARs") and agency-specific regulations supplemental to DFARs, which comprehensively regulate the award, formation, administration and performance of DoD government contracts;
- the Department of State Acquisition Regulation which regulates the relationship between a Department of State organization and a contractor or potential contractor;
- business ethics and public integrity obligations, which govern conflicts of interest and the hiring of former government employees, restrict the granting of gratuities and funding of lobbying activities and incorporate other requirements such as the Anti-Kickback Act, the Procurement Integrity Act, the False Claims Act and the Foreign Corrupt Practices Act;
- export and import control laws and regulations, including but not limited to the Export Administration Regulations and International Traffic in Arms Regulations; and

- laws, regulations and executive orders restricting the use and dissemination of information classified for national security purposes and the exportation of certain products and technical data.

USG agencies routinely audit and investigate government contractors for compliance with applicable laws and standards. Our role and status as a large government supplier to HHS, particularly BARDA increases the likelihood of Congressional review and oversight. The legal framework we are subject to as a government contractor imposes stricter penalties than those normally applicable to commercial contracts, such as criminal and civil liability and suspension and debarment from future government contracting. In addition, pursuant to various laws, our government contracts can be subject to unilateral termination or modification by the government for convenience, detailed auditing and accounting systems requirements, statutorily controlled pricing, sourcing and subcontracting restrictions and statutorily mandated processes for adjudicating contract disputes.

The Project BioShield Act of 2004. The Project BioShield Act of 2004 (Project BioShield) was enacted to augment market incentives for companies pursuing the development of MCMs of which the government is the only significant market. Project BioShield provided $5.6 billion over 10 years to develop, purchase, and stockpile MCMs for use in a public health emergency against CBRNE agents.

The Pandemic and All Hazards Preparedness Act of 2006 and Reauthorization Acts. The Pandemic and All Hazards Preparedness Act of 2006 established the role of Assistant Secretary for Preparedness and Response ("ASPR") within HHS and provided statutory authorities for a number of programs, including the creation of BARDA to support the development and procurement of MCMs to respond to CBRNE. The Pandemic All Hazards Preparedness Reauthorization Act of 2013 ("PAHPRA") continued BARDA's role and reauthorized Project BioShield funding through fiscal year 2018 and provided BARDA with additional appropriations to support advanced research and development. The Pandemic and All-Hazards Preparedness and Advancing Innovation Act of 2019 reauthorized Project BioShield's special reserve fund and authorized 10-year funding for product development. BARDA has used the incentives under Project BioShield and subsequent reauthorizations of it to build a robust pipeline of MCMs for multiple CBRNE agents. It has also procured and stockpiled many of our related products for potential use in the event of a PHT emergency, including BioThrax, ACAM2000, Anthrasil, BAT, VIGIV and raxibacumab products.

Funding for BARDA is provided by annual appropriations by Congress. Congress appropriates annual funding for procurement of MCMs for the SNS (currently managed by ASPR) and for the NIAID to conduct biodefense research. This appropriation funding supplements amounts available under Project BioShield.

Emergency Use Authorization

Section 564 of the Federal Food, Drug, and Cosmetics Act ("FDCA") authorizes FDA to issue EUAs to permit the introduction into interstate commerce of unapproved MCMs, or approved MCMs for unapproved uses, in the context of certain potential or actual public health emergencies. Several actions are required to trigger FDA's authority to issue EUAs. First, there must be a determination by certain federal officials that a particular threat or emergency exists. This can be (1) a determination by the Secretary of HHS that there is a public health emergency, or a significant potential for a public health emergency, that affects, or has a significant potential to affect, national security or the health and security of United States citizens living abroad, and that involves CBRN agents; (2) a determination by the Secretary of Homeland Security ("DHS") that there is a domestic emergency, or a significant potential for a domestic emergency, involving a heightened risk of attack with a CBRN agent; (3) a determination by the Secretary of Defense that there is a military emergency, or a significant potential for a military emergency, involving a heightened risk to United States military forces from a CBRN agent; or (4) the identification of a material threat pursuant to section 319F–2 of the Public Health Service Act ("PHSA") sufficient to affect national security or the health and security of United States citizens living abroad. Based on one of these determinations, the Secretary of HHS may make a declaration that circumstances exist justifying EUAs for MCMs to respond to the threat or emergency at issue. Once the relevant determination and declaration are issued, FDA has the authority to issue EUAs for the use of specific medical products based on criteria established by statute, including that the product at issue may be effective in diagnosing, treating, or preventing serious or life-threatening diseases or conditions related to the threat or emergency and that there are no adequate, approved, and available alternatives to the issuance of an EUA. EUAs are subject to additional conditions and restrictions, are product-specific, and terminate when the EUA is revoked or the emergency determination or declaration underlying the EUA terminates.

Under PAHPRA, the USG may purchase certain MCMs for the SNS prior to FDA approval, licensure or authorization, under certain circumstances. BARDA is currently procuring AV7909, a product candidate that has not been approved or authorized by FDA under these authorities.

Public Readiness and Emergency Preparedness Act. The Public Readiness and Emergency Preparedness Act ("PREP Act") creates liability immunity for manufacturers of MCMs when the Secretary of HHS issues a declaration related to a specific disease, condition or public health threat. A PREP Act declaration is intended to provide liability immunity from claims under federal or state law for loss caused by, arising out of, relating to, or resulting from the administration or use of a covered MCM. The only statutory exception to this immunity is for actions or failures to act that constitute willful misconduct. The Secretary of HHS has issued PREP Act declarations covering MCMs for smallpox, mpox, and other orthopox; anthrax; and botulinum toxin. These declarations could apply to BioThrax, ACAM2000, raxibacumab, Anthrasil, BAT and VIGIV products, as covered MCMs. The declarations for anthrax and botulism expire on December 31, 2027. The declaration for smallpox, mpox, and other orthopox expires on December 31, 2032.

Support Anti-Terrorism by Fostering Effective Technology Act of 2002. The Support Anti-terrorism by Fostering Effective Technologies Act of 2002 (“SAFETY Act”) was enacted to create certain liability limitations for Qualified Anti-Terrorism Technologies (“QATTs”) for claims arising out of, related to, or resulting from an act of terrorism. DHS administers the SAFETY Act program, which provides two potential categories of liability protections – designation and certification. If DHS deems an MCM a “Designated Technology,” then the company’s liability is limited to the amount of liability insurance that DHS determines the company must maintain. To receive “certification,” a QATT must first be “designated” and also be shown to perform as intended, conform to the manufacturer’s specifications, and be safe for use as intended. Certification allows the company to assert the Government Contractor defense for claims arising from acts of terrorism.

DHS granted SAFETY Act designation and certification for BioThrax and RSDL in 2006 and has continued to renew those determinations. Any future renewals of the SAFETY Act designation and certification for BioThrax and RSDL products may not provide adequate protection from all claims made against us.

Product Development for Therapeutics and Vaccines

Pre-Clinical Testing. We generally perform pre-clinical safety and efficacy testing on our product candidates before we initiate clinical trials.

Animal Rule. Conducting controlled human clinical trials to determine efficacy of MCMs against dangerous pathogens may sometimes be unethical or unfeasible. In such circumstances, products may be approved under the FDA’s “Animal Rule.” According to the FDA, this regulatory pathway can only be pursued if conducting human efficacy studies would be unethical and field trials to study the product’s effectiveness, after an accidental or deliberate exposure, are not feasible. Under the “Animal Rule,” under some circumstances, approval of product candidates can be based on clinical data from trials in healthy subjects that demonstrate adequate safety and immunogenicity and efficacy data from animal studies. These approvals generally are associated with a requirement for post-approval trials that would be conducted in the event of an act of bioterrorism, a pandemic, or other natural exposure to the pathogen at issue.

Investigational New Drug Application. Before clinical testing may begin, the results of pre-clinical testing and other available clinical data and manufacturing information must be submitted to the FDA as part of an Investigational New Drug ("IND") application. The data must provide an adequate basis for evaluating both the safety and the scientific rationale for the initial clinical studies. The FDA may impose a full or partial clinical hold on the effectiveness of an IND pending receipt of additional information.

Clinical Trials. Clinical trials involve administration of a product candidate to healthy human volunteers or patients under the supervision of a qualified physician under a regulatory agency approved protocol for the country in which the human trial is to be conducted. Human clinical trials typically are conducted in the following three sequential phases.

- Phase 1 involves introduction of the drug into healthy human subjects to assess safety, metabolism, pharmacokinetics, pharmacological actions, side effects and early evidence of effectiveness.
- Phase 2 involves studies to assess the efficacy of the drug in specific, targeted indications, explore tolerance, optimal dosage, and safety.
- Phase 3 trials must assess clinical efficacy and safety in a larger number of healthy subjects or patients, are intended to permit the FDA to evaluate the overall benefit-risk relationship of the product and provide adequate information for drug labeling.

In addition, in certain circumstances Phase 4 studies may be conducted following marketing approval in order to provide additional data related to drug use. The FDA may impose a temporary or permanent clinical hold, or other sanctions, if it believes that a clinical trial is not being conducted in accordance with the FDA requirements or presents an unacceptable risk to the clinical trial subjects.

Good Clinical Practice. All phases of clinical studies must be conducted in conformance with the FDA's bioresearch monitoring regulations and Good Clinical Practices ("GCP") which are ethical and scientific quality standards for conducting clinical trials.

Marketing Approval – Biologics, Drugs and Vaccines

Biologics License Application/New Drug Application. For large molecule products, such as vaccines, products derived from blood and blood components, and antibodies, all data obtained from a development program, including research and product development, manufacturing, pre-clinical and clinical trials, labeling and related information are submitted in a BLA to the FDA and in similar regulatory filings with the corresponding agencies in other countries for review and approval. For small molecule drugs, this information is submitted in a NDA filing. The submission of an application, either a BLA or an NDA, is not a guarantee that the FDA will find the application complete and accept it for filing. The FDA may issue a refuse to file, or RTF, letter to the applicant and request additional information, in which case the application must be resubmitted. Most applications are subject to a substantial application fee and, if approved, will be assessed an annual fee. Under the FDCA, the FDA has the authority to grant waivers of certain user fees.

In reviewing a BLA or NDA, the FDA may grant approval, request more information or data, or decline to approve the application if, if among other potential deficiencies, the FDA determines that the application does not provide substantial evidence of effectiveness, the drug is not safe for use under the conditions of use in the proposed labeling, or there are deficiencies in manufacturing quality. If the FDA decides not to approve an application, it will issue a complete response letter, or CRL. During the application, the FDA will also typically inspect one or more clinical sites to ensure compliance with GCPs as well as the facility or facilities at which the candidate is manufactured to ensure compliance with current good manufacturing practices ("cGMPs").

The receipt of regulatory approval may take many years, and typically involves the expenditure of substantial financial resources. The FDA may also impose conditions upon approval or significantly limit the indications approved for a given product and/or require, as a condition of approval, enhanced labeling, packaging, post-approval clinical trials, expedited reporting of certain adverse events, pre-approval of promotional materials or restrictions on consumer advertising, which could negatively impact the commercial success of a product.

Abbreviated New Drug Applications and Section 505(b)(2) New Drug Applications. Most drug products obtain FDA marketing approval under a full NDA for innovator products, or an abbreviated new drug application ("ANDA") for generic products. The Hatch-Waxman amendments to the FDCA established a statutory procedure for submission and FDA review and approval of ANDAs for generic versions of branded drugs previously approved by the FDA (reference listed drugs, or RLDs). Because the safety and efficacy of RLDs have already been established by the brand company (sometimes referred to as the innovator), the FDA does not require ANDA applicants to independently demonstrate safety and efficacy of generic products. However, a generic manufacturer is required to demonstrate that its product contains the same active ingredient as, and is bioequivalent to, the innovator product, among other requirements. For a systemically absorbed drug, bioequivalence generally is established when there is an absence of a significant difference in the rate and extent of absorption of the generic product and the listed drug.

A third alternative for approval of a drug product is commonly referred to as a Section 505(b)(2) NDA, which enables the applicant to rely, in part, on the FDA's findings of safety and efficacy of an existing product in support of its application. Section 505(b)(2) NDAs often provide an alternate path to FDA approval for new or improved formulations or new uses of previously approved products. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from studies not conducted by or for the applicant and for which the applicant has not obtained a right of reference. The applicant might rely upon the FDA's findings with respect to certain pre-clinical or clinical studies conducted for an approved product. The FDA may also require companies to perform additional studies or submit other information to support the change from the approved product. The FDA may then approve the new product candidate for certain label indications for which the referenced product has been approved, as well as for any new indication sought by the applicant.

In seeking approval for a drug through an NDA, including a 505(b)(2) NDA, applicants are required to submit to the FDA information about certain patents of the applicant or that are held by third parties whose claims cover the applicant's product. Upon approval of an NDA, each of the patents for which the applicant has submitted information in connection with the NDA is then published in the Orange Book. Any subsequent applicant who files an ANDA or a 505(b)(2) NDA must make one of the following certifications to the FDA concerning each patent for which the RLD sponsor was required to submit information in connection with the RLD: (1) the patent information has not been submitted to the FDA; (2) has expired; (3) the date on which the patent will expire; or (4) the patent is invalid, unenforceable, or will not be infringed by the manufacture, use or sale of the drug product for which the application is submitted. This last certification is known as

a paragraph IV certification. Alternatively, the ANDA or 505(b)(2) NDA applicant may submit a statement that there are no relevant patents or that a method-of-use patent does not claim a proposed indication or other condition of use for which the applicant is seeking approval.

If the RLD's NDA holder or patent owner initiates patent litigation to enforce an Orange Book-listed patent within 45 days after receiving notice of a paragraph IV certification, the FDA generally is prohibited from approving the application until the earlier of 30 months from the date of receipt of the paragraph IV notice, although this stay may terminate earlier depending upon the resolution of the litigation, if the court issues an order terminating the stay, or if the patent owner or exclusive patent licensee consents to approval of the application before the expiration of the stay. The ANDA or 505(b)(2) application also will not be approved until any applicable non-patent exclusivity listed in the Orange Book for the RLD has expired.

Biosimilar Products. When a biological product is licensed for marketing by FDA through the approval of a BLA under section 351(a) of the PHSA, the product may be entitled to exclusivity barring FDA from accepting or approving an application under section 351(k) of the PHSA for a competing products for certain periods of time. The Biologics Price Competition and Innovation Act of 2009 (the "BPCIA") added Section 351(k) of the PHSA, which provides an abbreviated approval pathway for biological products that are biosimilar to or interchangeable with an FDA-licensed reference biological product. The FDA may approve a biosimilar product if it finds that the product is highly similar to the reference product notwithstanding minor differences in clinically inactive components and there are no clinically meaningful differences between the proposed biosimilar product and the reference product in terms of safety, purity, and potency. For the FDA to approve an interchangeable biosimilar product, it must conclude that the product is biosimilar to the reference product, can be expected to produce the same clinical result as the reference product in any given patient, and—for a product that is administered more than once to an individual—alternating or switching between the proposed interchangeable product and the reference product would not create an increased risk in terms of safety or diminished efficacy compared to using the reference product only.

FDA will not accept a biosimilar application until four years after the date of first licensure of a biological product licensed under section 351(a) of the PHSA, and FDA will not approve a biosimilar application until 12 years after such date of first licensure. This type of exclusivity is known as reference product exclusivity. The approval of a supplemental BLA or certain subsequent BLAs does not give rise to a new date of first licensure, and, consequently, does not yield an additional period of reference product exclusivity. from the date of first licensure of a biological product approved under section 351(a), Moreover, reference product exclusivity does not affect the timing of FDA's acceptance or approval of a competing sponsor's section 351(a) BLA containing the sponsor's own pre-clinical data and data from adequate and well-controlled clinical trials to demonstrate the safety, purity, and potency of its product. There have been recent legislative proposals to reduce the duration of the 12-year reference product exclusivity period, but none has been enacted to date. Moreover, many states have enacted laws that address pharmacy practices involving biosimilar products.

Post-Approval Requirements. Any drug, biologic or medical device product for which we receive FDA approval will be subject to continuing regulation by the FDA, including, among other things, record keeping requirements, reporting of adverse events, providing FDA with updated safety and efficacy information, product sampling and distribution requirements, restrictions on advertising and promotion, and FDA inspections. Adverse events that are reported after marketing approval can result in additional limitations being placed on the product's distribution or use and, potentially, withdrawal or suspension of the product from the market. The FDA may also require post-approval clinical trials and/or safety labeling changes.

Facilities involved in the manufacture and distribution of approved products are required to be registered with the FDA and certain state agencies and are subject to periodic unannounced inspections by the FDA for compliance with cGMP and other laws.

A company that is found to have improperly promoted unapproved or off-label uses or otherwise not to have met applicable promotion rules may be subject to significant liability under both the FDCA and other statutes, including the False Claims Act.

Orphan Drugs. Under the Orphan Drug Act, an applicant can request the FDA to designate a product as an "orphan drug" in the U.S. if the drug is intended to treat a rare disease or condition. A disease or condition is considered rare if it affects fewer than 200,000 people in the U.S. or there is no reasonable expectation that the cost of developing the drug and making it available in the United States will be recovered from sales in the United States. A manufacturer must request orphan drug designation prior to submitting a BLA or NDA. Products designated as orphan drugs may be eligible for special grant funding for R&D, FDA assistance with the review of clinical trial protocols, potential tax credits for research,

an exemption from the application fee for marketing applications and a seven-year period of orphan drug exclusivity after marketing approval. A grant of an orphan designation is not a guarantee that a product will be approved.

Orphan drug exclusivity (afforded to the first applicant to receive approval for an orphan designated drug for a particular rare disease or condition) generally prevents FDA approval of another sponsor's application for the same drug or for the same rare disease or condition. Orphan drug exclusivity will not bar approval of the same product marketed by a different manufacturer under certain circumstances, including if the company with orphan drug exclusivity is not able to meet market demand or the subsequent product is shown to be clinically superior to the approved product on the basis of greater efficacy or safety, or providing a major contribution to patient care.

Vaccine and Therapeutic Product Lot Protocol. Because the manufacturing process for biological products is complex, the FDA requires for many biologics, including most vaccines and immune globulin products, that each product lot undergo thorough testing for purity, potency, identity and sterility. FDA may request samples of any lot and, when deemed necessary for the safety, purity, and potency of the product, FDA may prohibit us from distributing a lot until FDA releases the lot. Several of our vaccines are subject to lot release protocols by the FDA and other regulatory agencies.

Marketing Approval – Devices

Devices may be marketed as stand-alone devices or as constituent parts of a Combination Product, such as a device for delivery of a drug product. Unless an exemption applies, each medical device commercially distributed in the United States requires either FDA clearance of a 510(k) premarket notification, approval of a premarket approval application ("PMA") or issuance of a de novo classification order.

Medical devices are classified into one of three classes -- Class I, Class II or Class III - depending on the degree of risk and the level of control necessary to assure the safety and effectiveness of each medical device. Medical devices deemed to pose lower risks are generally placed in either Class I or II. While most Class I devices are exempt from the 510(k) premarket notification requirement, manufacturers of most Class II devices are required to submit to the FDA a pre-market notification. Devices deemed by the FDA to pose the greatest risk, such as life-sustaining life-supporting or many implantable devices, or devices that have been found not substantially equivalent to a legally marketed Class I or Class II predicate device, are placed in Class III, requiring approval of a PMA.

All clinical investigations of devices to determine safety and effectiveness must be conducted in accordance with the FDA's investigational device exemption ("IDE") regulations that govern investigational device labeling, prohibit promotion of the investigational device, and specify an array of study review and approval, informed consent, recordkeeping, reporting and monitoring responsibilities of study sponsors and study investigators. If the device presents a "significant risk" to human health, as defined by the FDA, the FDA requires the device sponsor to submit an IDE application to the FDA, which must become effective prior to commencing human clinical trials. All clinical device studies, including non-significant risk studies, must be approved by, and conducted under the oversight of, an Institutional Review Board ("IRB"). The IRB is responsible for the initial and continuing review of the study and may pose additional requirements for the conduct of the study.

Both before and after a medical device is commercially distributed, manufacturers and marketers of the device have ongoing responsibilities under FDA regulations, including, for example, establishment registration and device listing; compliance with the requirements of the Quality System Regulation ("QSR"); compliance with requirements regarding the labeling and marketing of devices; medical device reporting regulations; correction and removal reporting regulations; compliance with requirements for Unique Device Identification ("UDI"); and post-market surveillance activities and requirements.

Device manufacturers are subject to periodic and unannounced inspection by the FDA. The FDA reviews design and manufacturing practices, record keeping, reports of adverse events, labeling and other information to ensure compliance with the QSR and other applicable requirements, and to identify potential problems with manufacturing processes and marketed medical devices.

A combination product is a product comprised of two or more regulated components (e.g., a drug and device) that are combined into a single product, co-packaged, or sold separately but intended for co-administration, as evidenced by the labeling for the products (cross-labeling). Like their constituent parts—e.g., drugs and devices—combination products are highly regulated and subject to a broad range of pre- and post-market requirements including premarket review, cGMPs, or QSRs, adverse event reporting, periodic reports, labeling and advertising and promotion requirements and restrictions, market withdrawal and recall. Combination products are typically reviewed through a marketing submission that corresponds to the constituent part which provides the primary mode of action ("PMOA") for the combination product. For

example, if the PMOA of a device-biologic combination product is attributable to the biologic, the agency center that reviews biologics would have the primary jurisdiction for the review.

The FDA also regulates the export of medical devices from the U.S., and medical devices that have not received FDA approval, or clearance or are exempt from premarket review requirements, are subject to FDA export requirements.

Manufacturing Requirements

The FDA's regulations require that drugs be manufactured in specific approved facilities and in accordance with cGMPs. The cGMP regulations include requirements relating to organization and personnel, buildings and facilities, equipment, control of components and product containers and closures, production and process controls, packaging and labeling controls, holding and distribution, laboratory controls, records and reports, and returned and salvaged products. The manufacturing processes for devices must likewise be performed in compliance with the applicable portions of the QSR, which covers the methods and the facilities and controls for the design, manufacture, testing, production, processes, controls, quality assurance, labeling, packaging, distribution, installation and servicing of finished devices intended for human use. Manufacturers and other entities involved in the manufacture and distribution of cleared, approved, or otherwise authorized products are required to register their establishments with the FDA, and in some instances state agencies, and they are subject to periodic unannounced inspections by the FDA for compliance with cGMPs and other requirements.

Inspections must follow a "risk-based schedule" that may result in certain establishments being inspected more frequently. Manufacturers may also have to provide, on request, electronic or physical records regarding their establishments. Delaying, denying, limiting, or refusing inspection by the FDA may lead to a product being deemed to be adulterated. Changes to the manufacturing process, specifications or container closure system for an approved drug product are strictly regulated and often require prior FDA approval before being implemented. Likewise, FDA's regulations require clearance of a new 510(k) premarket notification for modifications to 510(k) cleared devices that could significantly affect safety or effectiveness or that would constitute a major change in the intended use of the device, and approval of a PMA supplement for certain modifications to PMA-approved devices that affect the safety or effectiveness of the device. The FDA's regulations also require, among other things, the investigation and correction of any deviations from cGMP or failures to follow the QSR and the maintenance of applicable documentation by the sponsor and any third-party manufacturers involved in producing the approved, cleared, or otherwise authorized product.

Regulation Outside of the U.S.

Currently, we maintain a commercial presence in the U.S. and Canada as well as certain other countries. In the EU, medicinal products are authorized following a process that is similarly demanding as the process required in the U.S. Drug products may be authorized in one of two ways, either through the mutual recognition/decentralized procedure, which provides for the mutual recognition procedure of national approval decisions by the competent authorities of the EU Member States or through the centralized procedure, which provides for the grant of a single marketing authorization that is valid for all EU member states. Each foreign country has its own regulatory requirements to medical devices. Before a medical device can be placed on the market in the EU compliance with the requirements of the Medical Devices Regulation (EU) 2017/745 must be demonstrated in order to affix the CE Mark to the product. The method of assessing conformity varies depending on the class of the product, but normally involves a combination of self-assessment by the manufacturer and a third-party assessment by a notified body. We are also subject to many of the same continuing post-approval requirements in the EU as we are in the U.S. (e.g., good manufacturing practices).

As of January 1, 2021, the UK is no longer part of the EU following “Brexit”. All existing EU law in force on December 31, 2020 has been retained in UK law, subject to certain revisions that have become necessary as a result of Brexit. Thus, at least initially, the UK and the EU laws were aligned. Northern Ireland continues to be subject to EU rules governing medicines and medical devices under the Northern Ireland Protocol. However, EU laws that took effect after January 1, 2021, including the EU Medical Devices Regulation, are not effective in Great Britain, comprising England, Scotland and Wales, and the national laws applicable in Great Britain may further diverge from EU law in the future.

Potential Sanctions

For all FDA-regulated products, if the FDA finds that a manufacturer has failed to comply with applicable laws and regulations, or that a product is ineffective or poses an unreasonable health risk, it can institute or seek a wide variety of enforcement actions and remedies, including but not limited to:

- restrictions on products, manufacturers or manufacturing processes;

- restrictions on the labeling or marketing of a product;
- restrictions on distribution or use of a product;
- requirements to conduct post-marketing studies or clinical trials;
- warning letters or untitled letters;
- withdrawal of the products from the market;
- refusal to approve pending applications or supplements to approved applications that are submitted;
- recall of products;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

Health regulatory authorities in other countries have similar rules and regulations although the specifics vary from jurisdiction to jurisdiction.

Fraud, Abuse and Anti-Corruption Laws

The U.S. and most other jurisdictions have detailed requirements that apply to government and private health care programs, and a broad range of fraud and abuse laws, transparency laws, and other laws. Relevant U.S. federal and state healthcare laws and regulations include:

- The federal Anti-Kickback Statute;
- The False Claims Act;
- The federal Health Insurance Portability and Accountability Act of 1996 ("HIPAA"), as amended by the Health Information Technology for Economic and Clinical Health ("HITECH") Act;
- The price reporting requirements under the Medicaid Drug Rebate Program and the Veterans Health Care Act of 1992;
- The federal Physician Payment Sunshine Act, being implemented as the Open Payments Program; and
- Analogous and similar state laws and regulations.

Our operations are also subject to compliance with the Foreign Corrupt Practices Act ("FCPA") which prohibits corporations and individuals from corruptly paying, offering to pay, or authorizing the payment of anything of value to any foreign government official, government staff member, political party or party official, or political candidate, directly or indirectly, in an attempt to influence a person working in an official capacity or otherwise obtain an improper advantage. We also may be impacted under the FCPA by the activities of our distributors, collaborators, contract research organizations, vendors, consultants, agents, or other business partners. As a public company, the FCPA also requires us to make and keep books and records that accurately and fairly reflect all of our transactions and to devise and maintain an adequate system of internal accounting controls. Our operations are also subject to compliance with the U.K. Bribery Act, which applies to bribery activities both in the public and private sector, Canada's Corruption of Foreign Public Officials Act and similar laws in other countries.

Failure to comply with these laws and regulations could subject us to criminal or civil penalties.

Regulations Governing Reimbursement

The marketing practices of U.S. pharmaceutical manufacturers are also subject to federal and state healthcare laws related to government funded healthcare programs.

In the U.S., certain of our products are reimbursed under federal and state health care programs such as Medicaid, Medicare, TriCare, and or state pharmaceutical assistance programs. Many foreign countries have similar laws.

Various U.S. federal health care laws apply when we or customers submit claims for items or services that are reimbursed under federally funded health care programs, including federal and state anti-kickback laws, false claims laws, and anti-self-referral laws, which may apply to federal and state-funded Medicaid and other health care programs and private third-party payers.

Failure to comply with these laws and regulations could subject us to criminal or civil penalties.

Additionally, drug pricing is an active area for regulatory reform at the federal and state levels, and significant changes to current drug pricing and reimbursement structures in the U.S. continue to be considered and enacted. For example, the Inflation Reduction Act of 2022 (the “IRA”), was signed into law on August 16, 2022. As written, the IRA will, among other provisions, give HHS the ability and authority to directly negotiate with manufacturers the price that Medicare will pay for certain single-source drugs that account for the highest total Medicare spending. The IRA will also require manufacturers of certain Part B and Part D drugs to issue to HHS rebates based on certain calculations and triggers (i.e., when drug prices increase and outpace the rate of inflation). The Centers for Medicare & Medicaid Services is in the process of implementing a Medicare Drug Price Negotiation Program, and this program may affect future Medicare reimbursement for certain of our products.

Data Privacy Laws

A number of states in the U.S. have passed or introduced bills, which, if passed, impose operational requirements on U.S. companies similar to the requirements reflected in the General Data Protection Regulation ("GDPR") in the EU. For example, the California Consumer Privacy Act of 2018 ("CCPA"), which came into effect on January 1, 2020, requires covered companies that process personal information on California residents to make new disclosures to consumers about their data collection, use and sharing practices, allows consumers to opt out of certain data sharing with third parties and provides a new private right of action for data breaches. Additionally, the Federal Trade Commission and many state attorney generals are interpreting federal and state consumer protection laws to impose standards for the online collection, use, dissemination and security of data. The compliance and other burdens imposed by the EU's GDPR, CCPA and similar privacy laws and regulations may be substantial as they are subject to differing interpretations and implementation among jurisdictions. The restrictions imposed by such laws may require us to modify our data handling practices and impose additional compliance costs and burdens.

Other Industry Regulation

Our present and future business has been and will continue to be subject to various other laws and regulations. Various laws, regulations and recommendations relating to safe working conditions, laboratory practices, the experimental use of animals, and the purchase, storage, movement, import, export, use and disposal of hazardous or potentially hazardous substances, including radioactive compounds and infectious disease agents used in connection with our product development, are or may be applicable to our activities.

HUMAN CAPITAL

We value our employees and the contributions each of them makes to achieving our mission to protect and enhance life. We are committed to working together toward our long-term aspiration to protect and enhance one billion lives by 2030. We strive to create an environment that is professionally and personally rewarding by offering challenging work and projects for individual and team contribution, and opportunities for professional and personal development. Ongoing investments in employee engagement and leadership development remain essential to building the capabilities needed to realize our business strategy. As of December 31, 2022, we had approximately 2,500 employees.

In January 2023, we announced an organizational restructuring as part of our sharpened strategic focus, which resulted in the elimination of 132 roles. In February 2023, we announced that we entered into an agreement to sell our travel health business to Bavarian Nordic and approximately 280 employees are expected to join Bavarian Nordic as part of the transaction.

Health and Wellness

Employee health and well-being remain a priority of acute importance to our company. As 2022 progressed and regional health risks and safety requirements changed, we continued to adjust our approach to ensure that operation-critical development and manufacturing employees working on-site had access to appropriate personal protective equipment, enhanced facility procedures, and other resources. Additionally, we transitioned many employees who had been working remotely back into our facilities in a full-time or part-time manner to support business priorities. Other employees

maintain a full-time remote work status and we continue to equip them with productivity and collaboration tools and resources.

Hiring and Talent Management

We focus on building leaders at every level with the requisite scientific, technical and professional skills to develop and deliver products and services that protect life. We have consistent talent processes and systems across the company including performance management, training and development and succession planning. We recognize the need for ongoing skill enhancement and support continued learning through on-the-job assignments, training programs, tuition assistance professional memberships and professional conference attendance. We use the Gallup Q12 instrument to measure employee engagement and inclusion and administer “pulse surveys” throughout the year to gather feedback on matters of interest and importance to our employees and our business.

Compensation and Benefits

Our total rewards plan consists of competitive salaries, bonuses, and for employees in eligible roles, equity awards based on company, group and individual performance. We focus on results and behavior because we value how we do things as much as getting them done. This approach is core to our pay-for-performance philosophy. We continue to provide employees access to country-specific salary range information so that they may have greater visibility to their current compensation levels and more context as they explore developing their careers through new roles within our company. In our industry ongoing skill enhancement is essential and we continue to support continuous learning through on-the-job assignments, training programs, tuition assistance, professional memberships and professional conference attendance.

Diversity, Equity and Inclusion Commitment

Diversity, equity and inclusion ("DEI") is integral to how we operate and our success. We are committed to attracting, developing, and retaining the best talent reflecting a diversity of ideas, backgrounds, and perspectives. DEI fuels our business growth, drives innovation in the products and services we develop, in the way we solve problems, and how we serve the needs of a global and diverse patient, customer and partner base. We recognize the value that diversity contributes to our global organization and the competitive advantage we can maintain by cultivating a culture of inclusion to benefit from our broad range of talents, perspectives, and ideas. We demonstrate respect for the individual by providing fair and equal treatment to all our employees and continuously identifying ways to recognize their various needs and interests. One example of our commitment is demonstrated by our first three inaugural Emergent Resource Groups ("ERGs") for black, women and veteran employees. While aligned by constituency, our ERGs are open to all employees and are another way we will look to catalyze a sense of belonging and connection to the organization. These groups open pathways of communication, help to expand learning opportunities, and offer avenues to advance our business strategy.

ENVIRONMENTAL, SOCIAL AND GOVERNANCE

Our mission to protect and enhance life has motivated us to explore our impact at a broader scale — environmental, social and governance ("ESG") stewardship, corporate responsibility, and ethics. Our approach to these issues is the foundation of good governance and strengthens accountability in all aspects of our business activities and relationships. Our ESG efforts are led by a cross-functional working group, overseen by the Nominating and Corporate Governance Committee, guided by our Internal Executive Steering Committee, and under the responsibility of the Vice President, Assistant Treasurer reporting into the Chief Financial Officer.

Each year, we assess our ESG priority areas and develop action items to advance progress in these areas. These areas include access to medicine, community engagement, compliance, corporate governance, diversity, equity and inclusion, employee engagement, environmental, health and employee safety, governmental relationship, innovation, manufacturing and product quality, patient and drug safety, scientific integrity, and supply chain management. Our strategy is influenced by the Task Force on Climate-Related Disclosures framework as well as the Sustainability Accounting Standards Board’s standards focused on the healthcare, biotechnology, and pharmaceutical industries. The annual ESG Report can be found at: www.emergentbiosolutions.com/wp-content/uploads/2022/11/2021-Emergent-ESG-Report.pdf. The information contained in the ESG report is not a part of, or incorporated by reference into, this Annual Report on Form 10-K.

Our ESG strategy is influenced by the Task Force on Climate-Related Financial Disclosures ("TCFD") framework as well as the Sustainability Accounting Standards Board’s ("SASB") standards focused on the healthcare, biotechnology, and pharmaceutical industries. The SASB standards provide guidelines on key sustainability issues that directly impact the operational performance and financial condition of our company.

Strengthening our culture and the quality of products and services we offer is an ongoing endeavor. Open and transparent communication with employees, customers, government officials, and community partners is vital to our success.

ESG Priority Issues

Each year, we will conduct an assessment of these priorities and develop action items to advance progress in these areas. Our board will provide oversight and governance over the implementation and disclosures relating to our ESG strategy:

- Access to Medicine
- Community Engagement
- Compliance
- Corporate Governance
- Diversity, Equity and Inclusion
- Employee Engagement
- Environmental, Health and Employee Safety
- Governmental Relationships
- Innovation
- Manufacturing and Product Quality
- Patient and Drug Safety
- Scientific Integrity
- Supply Chain Management

Sustainability and Environmental Management

We recognize that our operations have an impact on our local and global communities from the waste we generate, the energy we source, and the water we discharge. Environmental sustainability is a central consideration when improving and innovating our operational infrastructure across our enterprise and we must do out part to reverse the impacts of climate change which threaten environmental and human health.

We evaluate ESG risks and opportunities related to climate change through the framework that the Task Force on Climate-Related Financial Disclosures ("TCFD") recommends: (i) governance, (ii) strategy, and (iii) risk management. As we further develop our environmental sustainability strategies, we intend to collect data on our Scope 1 and Scope 2 greenhouse gas (GHG) emissions associated with our material operations. Doing so will enable Emergent to establish an energy baseline and prioritize future footprint reductions.

This will also allow us to make informed decisions on setting targets and creating an accompanying strategy and road map for meeting our goals. In congruence, Emergent will determine the relevance of disclosure related to the quantifiable financial impact to our company under various global warming scenarios in line with TCFD recommendations.

Board Committee Oversight

The primary oversight of ESG issues is delegated to the Audit Committee, with active involvement and participation in the oversight activities from both the Compensation and the Nominating and Corporate Governance committees. Our management provides regular updates on ESG initiatives and progress at both the committee and full board meetings. Each director serves on at lease one committee. The composition of the committees, biographies of our directors, and other relevant corporate governance information are available on the investor section of our website under “Governance.” In addition, we also provide detailed corporate governance information, disclosures, and data in our annual proxy statement.

AVAILABLE INFORMATION

Our common stock is traded on the New York Stock Exchange under the ticker symbol “EBS.” Our principal executive offices are located at 400 Professional Drive, Suite 400, Gaithersburg, Maryland 20879. Our telephone number is (240) 631-3200, and our website address is *www.emergentbiosolutions.com*. We make available, free of charge on our website, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and all amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the Exchange Act) as soon as reasonably practicable after we electronically file those reports with, or furnish them to, the SEC.

We also make available, free of charge on our website, the reports filed with the SEC by our executive officers, directors and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after copies of those filings are provided to us by those persons. In addition, we intend to make available on our website all disclosures that are required to be posted by applicable law, the rules of the SEC or the New York Stock Exchange listing standards regarding any amendment to, or waiver of, our code of business conduct and ethics. We have included our website address as an inactive textual reference only. The information contained on, or that can be accessed through, our website is not a part of, or incorporated by reference into, this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

The following risk factors and other information included in this Annual Report on Form 10-K should be carefully considered. The occurrence of any of the following risks or of unknown risks and uncertainties may adversely affect our business, operating results and financial condition.

RISK FACTOR SUMMARY

There are a number of government contracting risks that could impact our business, financial condition, operating results and cash flows, including:

- Reduced demand for and/or funding for procurement of AV7909 and/or BioThrax vaccines or ACAM2000 and discontinuation of funding of our other USG procurement and development contracts.
- Inability to secure follow-on product procurement contracts with the USG upon the expiration of any of our existing procurement contracts.
- Inability to receive FDA licensure of AV7909 and realize the full value of our contract for development and procurement of AV7909.

There are a number of manufacturing risks that could impact our business, financial condition, operating results and cash flows, including:

- Our inability to maintain quality and manufacturing compliance at our manufacturing facilities for our products and for product candidates for our CDMO customers.
- Disruption at, damage to or destruction of our development and/or manufacturing facilities may impede our ability to manufacture our products, as well as deliver our CDMO services.
- Our operations, including our use of hazardous materials, chemicals, bacteria and viruses expose us to significant potential liabilities.

There are a number of product development and commercialization risks that could impact our business, financial condition, operating results and cash flows, including:

- Clinical trials of product candidates are expensive and time-consuming, and their outcome is uncertain.
- We may fail to capitalize on the most scientifically, clinically or commercially promising or profitable product candidates.

There are a number of regulatory and compliance risks that could impact our business, financial condition, operating results and cash flows, including:

- Failure to comply with complex laws and regulations pertaining to government contracts and resources required for responding to related government inquiries.
- Conditions associated with approvals and ongoing regulation of products may limit how and the extent to which we manufacture and market them.
- Failure to comply with various health care laws could result in substantial penalties.
- Failure to comply with obligations under USG pricing programs may require reimbursement for underpayments and the payment of substantial penalties, sanctions and fines.
- The extent to which we may be able to lawfully offer to sell and sell unapproved products in many jurisdictions may be unclear or ambiguous and such activities may subject us to regulatory enforcement actions.

There are a number of competitive and political risks that could impact our business, financial condition, operating results and cash flows, including:

- Development and commercialization of pharmaceutical products are subject to evolving private and public sector competition.
- NARCAN Nasal Spray is currently subject to branded and generic competition in the U.S. and may be subject to branded and generic competition in Canada. Narcan Nasal Spray has a pending application with FDA for the switch of Narcan from prescription status to over-the-counter status, and there is no guarantee that FDA will approve that application.
- Biologic products may be affected by the approval and entry of follow-on biologics, or biosimilars in the United States and other jurisdictions.

There are a number of risks related to our intellectual property that could impact our business, financial condition, operating results and cash flows, including:

- Challenges in obtaining or maintaining intellectual property rights and defense or enforcement of such rights, including against current or potential infringers.

- Potential discrepancies or challenges with respect to licenses, including our failure to comply with obligations under such licenses.
- Potential loss of proprietary information and know-how, which carries the risk of reducing the value of our technology and products.
- Entry of competing generic drugs upon patent and/or regulatory expires or with patents no longer in force.

There are a number of risks related to reliance on third parties that could impact our business, financial condition, operating results and cash flows, including:

- The loss of sole-source suppliers or an increase in the price of inventory.
- If other parties do not perform as contractually required or as expected, we may not be able to obtain regulatory approval for or commercialize our product candidates.

There are a number of legal and reputational risks that could impact our business, financial condition, operating results and cash flows, including:

- Unfavorable results of legal proceedings and government investigations could adversely impact our business, financial condition and results of operations.
- Our work on PHTs has exposed us to criticism and may expose us to further criticism, from the media, government personnel and others, which could further harm our reputation, negatively affect our share price, operations and our ability to attract and retain talent.
- The potential for cyber security incidents to harm our ability to operate our business effectively in light of our heightened risk profile.
- We could face product liability exposure associated with the use of our medical products. There can be no assurance that the SAFETY Act, PREP Act, or other liability protections will be sufficient to limit or avoid product liability, and defending such cases requires significant resources.

There are a number of financial risks that could impact our business, financial condition, operating results and cash flows, including:

- Our ability to maintain sufficient cash flow from our operations to pay our substantial debt, both now and in the future.
- Our ability to obtain additional funding and be able to raise capital when needed, including in order to be able to continue as a going concern.
- Our ability to comply with the covenants under our senior revolving credit facility (the "Revolving Credit Facility") and senior term loan facility (the "Term Loan Facility", and together with the Revolving Credit Facility, the "Senior Secured Credit Facilities") and other debt agreements, and to refinance our Senior Secured Credit Facilities prior to their maturity in October 2023.

There are a number of risks related to our strategic acquisitions, divestitures and collaborations that could impact our business, financial condition, operating results and cash flows, including:

- Our failure to successfully integrate acquired businesses and/or assets into our operations and our ability to realize the benefits of such acquisitions.
- Our failure to consummate the sale of our travel health business to Bavarian Nordic and to realize the anticipated benefits of the transaction.

There are a number of risks associated with our common stock, including, but not limited to:

- Our business or our share price could be negatively affected as a result of the actions of shareholders.
- The price of our common stock has been and remains subject to extreme volatility.

The risk factors below contain more detailed descriptions of the risks identified above, as well as additional risks that may materially harm our business, financial condition or results of cash flows.

GOVERNMENT CONTRACTING RISKS

We currently derive a substantial portion of our revenue from USG procurement of the AV7909 vaccine and the TEMBEXA® (brincidofovir), oral antiviral and have historically derived a substantial portion of our revenue from USG procurement of the ACAM2000 vaccine and of BioThrax. If the USG's demand for and/or funding for procurement of AV7909, BioThrax and/or ACAM2000 vaccines and/or TEMBEXA® (brincidofovir), oral antiviral are substantially reduced, our business, financial condition, operating results and cash flows would be materially harmed.

We derive a substantial portion of our current and expected future revenues from USG procurement of AV7909. As AV7909 is a product candidate, there is a higher level of risk that we may encounter challenges causing delays or an inability to deliver AV7909 than with BioThrax, an approved product, which may have a material effect on our ability to generate and recognize revenue.

The success of our business and our future operating results are significantly dependent on anticipated funding for the procurement of our anthrax vaccines and the terms of such procurement by the USG, including the price per dose, the number of doses and the timing of deliveries. We have no certainty that funding will be made available for the procurement of our anthrax vaccines. If priorities for the Strategic National Stockpile ("SNS") change generally, or as a result of the conclusion of the USG's audit of the SNS, or with respect to the level of procurement of our anthrax vaccines, funding to procure future doses of AV7909 or BioThrax vaccines may be delayed, limited or not available, BARDA may never complete the anticipated full transition to stockpiling AV7909 in support of anthrax preparedness, and our future business, financial condition, operating results and cash flows could be materially harmed.

In addition, in the past we have derived a substantial portion of our revenues from sales of ACAM2000 vaccine to the USG. If priorities for the SNS change with respect to ACAM2000 vaccine or the USG decides not to exercise additional options under our ACAM2000 contract, our future business, financial condition, operating results and cash flows could be materially harmed.

We may not receive FDA approval of AV7909 in a timely manner or at all. Delays in our ability to achieve a favorable outcome from the FDA, or lack of approval from the FDA, could prevent us from realizing the full potential value of our BARDA contract for the advanced development and procurement of AV7909.

In collaboration with us, the CDC filed with the FDA a pre-EUA submission package related to AV7909, which enables FDA review of data in anticipation of a request for an EUA. Following this submission, BARDA began procuring AV7909, exercising its first contract option in July 2019 to procure 10 million doses of AV7909, its second contract option in July 2020 and, most recently, funding another procurement commitment in October 2021 for inclusion of additional doses into the SNS in support of anthrax preparedness.

In April 2022, we completed the rolling submission of a Biologics License Application ("BLA") filing with the FDA related to AV7909 and the application has been accepted for review. There can be no guarantee on the outcomes of the FDA review. The FDA may decide that our data are insufficient and may require additional pre-clinical, clinical or other studies. If we are unsuccessful in obtaining FDA licensure, in a timely manner or at all, we may not be able to realize the full potential value of the USG contract for AV7909, which could have a material adverse effect on our future business, financial condition, operating results and cash flows. Furthermore, prior to FDA licensure, if we obtain an EUA, the EUA could be terminated if the emergency determination underlying the EUA terminates.

Our USG procurement and development contracts require ongoing funding decisions by the USG. Any reduction or discontinuation of funding of any of these contracts could cause our business, financial condition, operating results and cash flows to suffer materially.

The USG is the principal customer for our Medical Countermeasures ("MCMs") and the primary source of funds for the development of most of our product candidates in our development pipeline, including our AV7909 procured product candidate. We anticipate that the USG will also be a principal customer for any MCMs that we successfully develop from within our existing product development pipeline, as well as those we acquire in the future. Additionally, a significant portion of our revenue comes from USG development contracts and grants. Over its lifetime, a USG procurement or development program, such as for AV7909 under our development and procurement contract with BARDA, may be implemented through the award of many different individual contracts and subcontracts. The funding for such government programs is subject to Congressional appropriations, generally made on a fiscal year basis, even for programs designed to continue for several years. These appropriations can be subject to a number of uncertainties, including political considerations, changes in priorities due to global pandemics, the results of elections and stringent budgetary constraints.

Additionally, our government-funded development contracts typically give the USG the right, exercisable in its sole discretion, to extend these contracts for successive option periods following a base period of performance. The value of the services to be performed during these option periods may constitute the majority of the total value of the underlying contract. For example, the September 2016 contract award from BARDA for the development and delivery to the SNS of AV7909 for post-exposure prophylaxis of anthrax disease consists of a five-year base period of performance and includes options for the delivery of additional doses of AV7909 to the SNS and options for an additional clinical study and post-marketing commitments. This contract was extended in September 2021 through 2025 and provides for additional procurement of AV7909 for the SNS over 18 months. If levels of government expenditures and authorizations for public health countermeasure preparedness decrease or shift to programs in areas where we do not offer products or are not developing product candidates, or if the USG otherwise declines to exercise its options under our existing contracts, our revenues would suffer, as well as

our business, financial condition, operating results and cash flows.

There can be no assurance that we will be able to secure follow-on product procurement contracts with the USG upon the expiration of any of our existing procurement contracts.

A significant portion of our revenue is substantially dependent upon product procurement contracts with the USG and foreign governments for our MCMs. Upon the expiration of a procurement contract, we may not be able to negotiate a follow-on procurement contract for the particular product on similar terms. We intend to negotiate follow-on procurement contracts for most of our MCMs upon the expiration of a related procurement contract, but there can be no assurance that we will be successful obtaining any follow-on contracts. Even if we are successful in negotiating a follow-on procurement contract, it may be for a lower product volume, over a shorter period of performance or be on less favorable pricing or other terms. An inability to secure follow-on procurement contracts for our approved products or product candidates could materially and adversely affect our revenues, and our business, financial condition, operating results and cash flows could be harmed.

The government contracting process is typically a competitive bidding process and involves unique risks and requirements.

Our business involves government contracts and grants, which may be awarded through competitive bidding. Competitive bidding for government contracts presents many risks and requirements, including:

- the possibility that we may be ineligible to respond to a request for proposal;
- the commitment of substantial time and attention of management and key employees to the preparation of bids and proposals;
- the need to accurately estimate the resources and cost structure that will be required to perform any contract that we might be awarded;
- the submission by third parties of protests to our responses to requests for proposal that could result in delays or withdrawals of those requests for proposal; and
- in the event our competitors protest or challenge contract or grant awards made to us through competitive bidding, the potential that we may incur expenses or delays, and that any such protest or challenge could result in the resubmission of bids based on modified specifications, or in the termination, reduction or modification of the awarded contract.

The USG may choose not to award us future contracts for either the development of our new product candidates or for the procurement of our existing MCM products and may instead award such contracts to our competitors. If we are unable to secure particular contracts, we may not be able to operate in the market for products that are provided under those contracts. Additionally, if we are unable to consistently win new contract awards over an extended period, or if we fail to anticipate all of the costs or resources that we will be required to secure and, if applicable, perform under such contract awards, our growth strategy and our business, financial condition and operating results and cash flows could be materially and adversely affected.

The amounts we are paid under our fixed price government procurement contracts are based on estimates we have made of the time, resources and expenses required for us to perform under those contracts. If our actual costs exceed our estimates, we may not be able to earn an adequate return or may incur a loss under these contracts, which could harm our operating results and materially reduce our net income.

Our current procurement contracts with the U.S. Department of Health ("HHS") and the U.S. Department of Defense ("DoD") are generally fixed price contracts. We expect that any future procurement contracts we successfully secure with the USG would likely also be fixed price contracts. Under a fixed price contract, we are required to deliver our products at a fixed price regardless of the actual costs we incur. Estimating costs that are related to performance in accordance with contract specifications is difficult, particularly where the period of performance is over several years, and when factoring in higher levels of inflation. Our failure to anticipate technical problems, estimate costs accurately or control costs during performance of a fixed price contract could reduce the profitability of such a contract or cause a loss, which could harm our operating results and materially reduce our net income.

Unfavorable provisions in government contracts, some of which may be customary, may subject our business to material limitations, restrictions and uncertainties and may have a material adverse impact on our business, financial condition, operating results and cash flows.

Government contracts customarily contain provisions that give the USG substantial rights and remedies, many of which are not typically found in commercial contracts, including provisions that allow the USG to:

- terminate existing contracts, in whole or in part, for any reason;

- unilaterally reduce or modify contracts or subcontracts;
- decline, in whole or in part, to exercise an option to purchase product under a procurement contract or to fund additional development under a development contract;
- decline to renew a procurement contract;
- claim certain rights to facilities or to products, including intellectual property, developed under the contract;
- require repayment of contract funds spent on construction of facilities in the event of contract default;
- take actions that result in a longer development timeline than expected;
- direct the course of a development program in a manner not chosen by the government contractor;
- suspend or debar the contractor from doing business with the government or a specific government agency;
- pursue civil or criminal remedies under acts such as the False Claims Act and False Statements Act; and
- control or prohibit the export of products.

Generally, government contracts contain provisions permitting unilateral termination or modification, in whole or in part, at the USG's convenience. Under general principles of government contracting law, if the USG terminates a contract for convenience, the government contractor may recover only its incurred or committed costs, settlement expenses and profit on work completed prior to the termination. If the USG terminates a contract for default, the government contractor is entitled to recover costs incurred and associated profits on accepted items only and may be liable for excess costs incurred by the government in procuring undelivered items from another source. All of our development and procurement contracts with the USG are terminable at their convenience with these potential consequences.

In addition, our USG contracts grant the USG the right to use technologies developed by us under the government contract or the right to share data related to our technologies, for or on behalf of the USG. Under our USG contracts, we may not be able to limit third parties, including our competitors, from accessing certain of these technology or data rights, including intellectual property, in providing products and services to the USG.

MANUFACTURING RISKS

An inability to maintain manufacturing compliance at our manufacturing facilities, which could adversely affect our business, financial condition, operating results and cash flows.

The FDA conducts periodic inspections of our manufacturing facilities for compliance with cGMP and QSR requirements relating to quality control. The Company's failure to regain or maintain compliance with cGMP standards at our manufacturing facilities has hindered and could continue to hinder our ability to continue manufacturing for our own products and for CDMO customers, which could adversely affect our business, financial condition, operating results and cash flows. For example in April 2021, we temporarily stopped manufacturing bulk drug substance material for Johnson & Johnson's COVID-19 vaccine at our Baltimore Bayview facility after issues were identified in a viral vaccine drug substance batch. Additionally, in February 2022, FDA inspected Emergent's Camden facility and issued a Form FDA 483. In August 2022, FDA issued a warning letter to Emergent, related to the February 2022 inspection. The warning letter included issues pertaining to equipment cleaning and maintenance; aseptic sterilization technique and procedures; and quality systems. Emergent has responded to the warning letter and continues to make significant progress implementing the corrective and preventive action commitments in the company's warning letter responses.

Disruption at, damage to or destruction of our manufacturing facilities could impede our ability to manufacture anthrax vaccines, our ACAM2000 vaccine or our other products or product candidates, as well as impact the delivery of CDMO services, which would harm our business, financial condition, operating results and cash flows.

Any interruptions in our manufacturing operations could result in our inability to produce products and product candidates for delivery to satisfy the demands of our customers in a timely manner, which would reduce our revenues and materially harm our business, financial condition, operating results and cash flows. A number of factors could cause interruptions, including:

- equipment malfunctions or failures;
- technology malfunctions;
- cyber-attacks;
- work stoppages or slowdowns, particularly due to the impact of COVID-19;
- civil unrest and protests, including by animal rights activists;
- injunctions;
- damage to or destruction of our manufacturing equipment, or of one or more of our facilities;
- findings and recommendations of health authorities or qualified persons in connection with facility inspections;

- ongoing supply chain interruptions from the COVID-19 pandemic, including lower available plasma levels caused by the pandemic (which has the potential to impact our plasma based products); and
- product contamination or tampering.

The factors listed above could cause disruptions at any of our manufacturing facilities. We do not have any redundant manufacturing facilities for any of our products. Accordingly, any damage to, or disruption or destruction of one or more of our facilities could impede our ability to manufacture our products, and our product candidates and our ability to provide manufacturing and development services for external customers, result in losses and delays, including delays in the performance of our contractual obligations or delays in our clinical trials, any of which could be costly to us and materially harm our business, financial condition, operating results and cash flows.

Providers of MCMs could be subject to an increased risk of terrorist activities. The USG has designated both our Lansing, Michigan and our Bayview bulk manufacturing facility in Baltimore, Maryland as facilities requiring additional security. Although we continually evaluate and update security measures, there can be no assurance that any additional security measures would protect these facilities from terrorist efforts determined to disrupt our manufacturing activities.

Problems may arise during the production of our products and product candidates, as well as those we produce for our CDMO customers, due to the complexity of the processes involved in their development, manufacturing and shipment or other factors. Significant delays in product manufacturing or development and our ability to ramp up production to meet the needs of our customers could cause delays in recognizing revenues, which would harm our business, financial condition, operating results and cash flows.

The majority of our products and product candidates are biologics. Manufacturing biologics, especially in large quantities, is complex. The products must be made consistently and in compliance with a clearly-defined manufacturing process. Problems during manufacturing may arise for a variety of reasons, including problems with raw materials, equipment malfunction and failure to follow specific protocols and procedures. Slight deviations anywhere in the manufacturing process, including obtaining materials, maintaining master seed or cell banks and preventing genetic drift, seed or cell growth, fermentation, contamination including from particulates among other things, filtration, filling, labeling, packaging, storage and shipping, potency and stability issues and other quality control testing, may result in lot failures or manufacturing shut-downs, delays in the release of lots, product recalls, spoilage or regulatory action. Such deviations may require us to revise manufacturing processes or change manufacturers. Additionally, as our equipment ages, it will need to be replaced, which has the potential to result in similar consequences. Success rates can also vary dramatically at different stages of the manufacturing process, which can reduce yields and increase costs. From time to time, we may experience deviations in the manufacturing process that may take significant time and resources to resolve and, if unresolved, may affect manufacturing output and could cause us to fail to satisfy customer orders or contractual commitments, lead to a termination of one or more of our contracts, lead to delays in our clinical trials, result in litigation, or other restrictions on the marketing or manufacturing of a product, any of which could be costly to us, damage our reputation and negatively impact our business. Regulatory action, including the issuance of Forms FDA 483 and warning letters can also have an impact.

Additionally, if changes are made to the manufacturing process, we may be required to provide the FDA with pre-clinical and clinical data showing the comparable identity, strength, quality, purity or potency of any impacted products before and after the changes.

We are contractually required to ship our biologic products at a prescribed temperature range and variations from that temperature range could result in loss of product and could significantly and adversely impact our revenues, which would harm our business, financial condition, operating results and cash flows.

In addition, we may not be able to ramp up our manufacturing processes to meet the rapidly changing demand or specifications of our customers on the desired timeframe, if at all. Our inability to ramp up manufacturing to meet the demand or specifications of our customers or the inability to timely obtain regulatory authorization to produce the products or product candidates of our customers could also harm our business, financial condition, operating results and cash flows.

Our products and product candidates procured by the USG and other customers require us to perform tests for and meet certain potency and lot release standards prescribed by the FDA and other agencies, which may not be met on a timely basis or at all.

We are unable to sell any products and product candidates that fail to satisfy such testing specifications. For example, we must provide the FDA with the results of certain tests, including potency tests, before certain lots are released for sale. Potency testing of each applicable lot is performed against qualified control lots that we maintain. We continually monitor the status of such reference lots for FDA compliance and periodically produce and qualify a new reference lot to replace the existing reference lot. If we are unable to satisfy USG

requirements for the release of our products or product candidates, our ability to supply such products and product candidates to authorized buyers would be impaired until such time as we become able to meet such requirements, which could materially harm our future business, financial condition, operating results and cash flows.

Our operations, including our use of hazardous materials, chemicals, bacteria and viruses, require us to comply with regulatory requirements and expose us to significant potential liabilities.

Our operations involve the use of hazardous materials, including chemicals, bacteria and viruses, and may produce dangerous waste products. Accordingly, we, along with the third parties that conduct clinical trials and manufacture our products and product candidates on our behalf, are subject to federal, state, local and foreign laws and regulations that govern the use, manufacture, distribution, storage, handling, exposure, disposal and recordkeeping with respect to these materials. Under the Federal Select Agent Program, pursuant to the Public Health Security and Bioterrorism Preparedness and Response Act, we are required to register with and be inspected by the CDC and the Animal and Plant Health Inspection Service if we have in our possession, or if we use or transfer, select biological agents or toxins that could pose a threat to public health and safety, to animal or plant health or to animal or plant products. This legislation requires stringent safeguards and security measures for these select agents and toxins, including controlled access and the screening of entities and personnel and establishes a comprehensive national database of registered entities. We are also subject to a variety of environmental and occupational health and safety laws. Compliance with current or future laws and regulations in this area can require significant costs and we could be subject to substantial fines and penalties in the event of noncompliance. In addition, the risk of contamination or injury from these materials cannot be completely eliminated. In such event, we could be held liable for substantial civil damages or costs associated with the cleanup of hazardous materials. From time to time, we have been involved in remediation activities and may be so involved in the future. Any related cost or liability might not be fully covered by insurance, could exceed our resources and could have a material adverse effect on our business, financial condition, operating results and cash flows. In addition to complying with environmental and occupational health and safety laws, we must comply with special regulations relating to biosafety administered by the CDC, HHS, U.S. Department of Agriculture and the DoD, as well as regulatory authorities in Canada and Switzerland.

PRODUCT DEVELOPMENT AND COMMERCIALIZATION RISKS

The product candidates that we work on for our CDMO customers may not be safe or effective and even if they are, we may be unable to manufacture sufficient quantities to meet demand.

We may provide CDMO services for the development and/or manufacture of various product candidates. There can be no assurance that these product candidates will be safe or effective or that they will be authorized for emergency use or approved by the FDA or any other health regulatory authority. Even if product candidates are found to be safe and/or effective and receive authorization or approval by a health regulatory authority or we receive authorization to produce drug substance or drug product at our facilities, the manufacturing processes for our CDMO programs are under development and are complex. There can be no assurance that we will be able to produce sufficient clinical or commercial quantities of any product candidate in a timely basis or at all. Difficulties manufacturing COVID-19 product candidates for certain CDMO customers and the November 2021 termination of the termination of the Center for Innovation in Advanced Development and Manufacturing (“CIADM”) agreement with BARDA for COVID-19 vaccine development and manufacturing (the “BARDA COVID-19 Development Public Private Partnership”) caused us to suffer considerable reputational and financial damage and resulted in the instigation of shareholder litigation and government investigations described elsewhere in this Annual Report. Any future failure to satisfy manufacturing commitments could adversely affect our reputation, subject us to potential legal liability and harm our business, financial condition, operating results and cash flows.

Our growth depends on our success in developing and commercializing our product candidates. If we are unable to commercialize these product candidates or experience significant delays or unanticipated costs in doing so, our business would be materially and adversely affected.

We have invested significant efforts and financial resources in the development of our vaccines, therapeutics and medical device product candidates and the acquisition of additional product candidates. In addition to our product sales, our ability to generate revenue is dependent on a number of factors, including the success of our development programs, the USG's interest in providing development funding for or procuring certain of our product candidates, and the commercial viability of our acquired or developed product candidates. The commercial success of our product candidates can depend on many factors, including accomplishing the following in an economical manner:

- successful development, formulation and cGMP or QSR scale-up of manufacturing that meets FDA and/or foreign regulatory requirements;

- successful program partnering;
- successful completion of clinical or non-clinical development;
- receipt of marketing approvals, clearances, or other authorizations from the FDA and equivalent foreign regulatory authorities;
- establishment of commercial manufacturing processes and product supply arrangements;
- training of a commercial sales force for the product;
- successful registration and maintenance of relevant patent and/or other proprietary protection;
- competitive pricing and market access; and
- acceptance of the product by potential government and other customers.

Clinical trials of product candidates are expensive and time-consuming, and their outcome is uncertain. We must invest substantial amounts of time and financial resources in these trials, which may not yield viable products. Failure to obtain regulatory approval for product candidates, particularly in the United States, could materially and adversely affect our financial resources, which would adversely affect our business, financial condition, operating results and cash flows.

Before obtaining regulatory approval or other authorization of our product candidates, we and our collaborative partners, where applicable, must conduct pre-clinical studies and clinical trials to establish proof of concept and demonstrate the safety and efficacy of our product candidates. Pre-clinical and clinical testing is expensive, difficult to design and implement, can take many years to complete and is uncertain as to outcome. Success in pre-clinical testing and early clinical trials does not ensure that later clinical trials will be successful, and interim results of such trials do not necessarily predict final results. An unexpected result in one or more of our clinical trials can occur at any stage of testing.

We may experience unforeseen events or issues during, or as a result of, pre-clinical testing, clinical trials or animal efficacy studies. These issues and events, which could delay or prevent our ability to receive regulatory approval for a product candidate, include, among others:

- our inability to manufacture sufficient quantities for use in trials;
- the unavailability or variability in the number and types of subjects for each study;
- safety issues or inconclusive or incomplete testing, trial or study results;
- drug immunogenicity;
- lack of efficacy of product candidates during the trials;
- government or regulatory restrictions or delays; and
- greater than anticipated costs of trials.

Pre-clinical and clinical testing for certain of our MCM product candidates may face additional difficulties and uncertainties because they cannot ethically or feasibly be tested in human subjects. In the U.S. we expect to rely on the Animal Rule to obtain regulatory approval for some of our MCM product candidates. The Animal Rule permits, for certain limited diseases and circumstances, the use of animal efficacy studies, together with human clinical safety and immunogenicity trials, to support an application for marketing approval. For a product approved under the Animal Rule, certain additional post-marketing requirements apply. For example, to the extent feasible and ethical, applicants must conduct post-marketing clinical studies, such as field studies in the event of an outbreak or act of bioterrorism, to assess the drug's safety and effectiveness. It is possible that results from the animal efficacy studies used to support approval under the Animal Rule may not be predictive of the actual efficacy of our product candidates in humans.

Under the PHSA and the FDCA, the Secretary of HHS can contract to purchase MCMs for the SNS prior to FDA approval, clearance, or other authorization of certain MCM product candidates. If the USG does not provide funding for and procure our MCM product candidates, they generally will have to be approved by the FDA through traditional regulatory mechanisms prior to sale and distribution in the United States.

We may fail to select or capitalize on the most scientifically, clinically or commercially promising or profitable product candidates.

We continue to evaluate our product development strategy and, as a result, may modify our strategy in the future. In this regard, we may, from time to time, focus our product development efforts on different product candidates or may delay or halt the development of various product candidates. We may change or refocus our existing product development, commercialization and manufacturing activities based on government funding decisions and other factors. This could require changes in our facilities and our personnel. Any product development changes that we implement may not be successful. In particular, we may fail to select or capitalize on the most scientifically, clinically or commercially promising or profitable product candidates or choose candidates for which government development funds are not available. Our decisions to allocate our R&D, management and financial resources toward particular product candidates or therapeutic areas may not lead to the development of viable commercial products and may divert resources from better business opportunities. Similarly, our decisions to

delay or terminate product development programs could also cause us to miss valuable opportunities.

REGULATORY AND COMPLIANCE RISKS

There are a number of complex laws and regulations that pertain to government contracts and compliance with those laws and regulations require significant time and cost, which could have a material adverse effect on our business, financial condition, operating results and cash flows.

As a manufacturer and supplier of MCMs to the USG addressing PHTs, we must comply with numerous laws and regulations relating to the procurement, formation, administration and performance of government contracts. These laws and regulations govern how we transact business with our government clients and, in some instances, impose additional costs and related obligations on our operations. For a detailed description of the most significant regulations that affect our government contracting business, see the prior discussion under "Regulation - Government Contracting."

We may be subject to government investigations of compliance with government acquisition regulations. USG agencies routinely audit and investigate government contractors for compliance with applicable laws and standards. Even though we take significant precautions to identify, prevent and deter fraud, misconduct and non-compliance, we face the risk that our personnel or outside partners may engage in misconduct, fraud or improper activities. If we are audited or investigated and such audit or investigation were to uncover improper or illegal activities, we could be subject to civil and criminal fines and penalties, administrative sanctions, including suspension or debarment from government contracting, and suffer significant reputational harm. The loss of our status as an eligible government contractor or significant fines or penalties associated with contract non-compliance or resulting from investigations could have a material adverse effect on our business.

Our long-term success depends, in part, upon our ability to develop, receive regulatory approval for and commercialize product candidates we develop or acquire and, if we are not successful, our business, financial condition, operating results and cash flows may suffer.

Our product candidates and the activities associated with them are subject to extensive FDA regulation and oversight. This includes, but is not limited to, laws and regulations governing product development, product labeling, product testing, manufacturing, storage, product distribution, record keeping, and advertising and promotion. In limited circumstances, governments may have the authority to procure products that have not obtained regulatory approval to stockpile for emergency preparedness and to respond to public health emergencies. In other circumstances, failure to obtain regulatory approval for a product candidate will prevent us from selling and commercializing the product candidate.

In the United States, to obtain authorization from FDA to market and sell any of our future drug, biologic, or vaccine products, we will be required to submit an NDA or BLA to the FDA. Under the FDCA, the PHSA, and FDA's implementation of those statutes, a company must support an NDA or BLA with substantial evidence that the product candidate is effective and evidence that the product is safe. Ordinarily, FDA requires data from adequate and well-controlled clinical trials, including Phase 3 trials conducted in patients with the disease or condition being targeted, to demonstrate that a drug meets the statutory standards for approval. Once an NDA or BLA is submitted, the FDA has substantial discretion and may refuse to accept our application or may decide that our data are insufficient to support approval and require additional pre-clinical, clinical or other studies. Even if marketing approval of a product candidate is granted, the approval may be subject to limitations on the indicated uses for which the product may be marketed, or to conditions of approval, or contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. Likewise, the data in our device submissions may be insufficient to support approval, de novo classification or clearance where required, and we may not be able to demonstrate to the satisfaction of the FDA that our devices are safe or effective for their intended uses or, for a 510(k) device, that they are substantially equivalent to the predicate. Even if we are granted 510(k) clearances, de novo authorizations, or PMA approvals, they may include significant limitations on the indications for use for the device.

Before we can market a new medical device, or an existing medical device for a new use, or make significant modifications to an existing product, we must first receive either clearance under Section 510(k) of the FDCA, de novo authorization, or approval of a PMA from the FDA, unless an exemption applies. These marketing submissions must also be supported by appropriate data, including in many cases clinical data. Likewise, changes to our combination products, including changes to the device constituent part, may also require a new submission to, and approval from, FDA.

However, our MCM product candidates may be eligible for approval under the FDA's "Animal Rule," under which findings from adequate and well controlled animal efficacy studies may serve as the basis of an approval when it is not feasible or ethical to conduct efficacy trials in humans. We cannot guarantee that the FDA will permit us to proceed with approval or licensure of any of our MCM product candidates under the Animal Rule. Even if we are able to proceed under the Animal Rule, product development can take a considerable amount of time, and the FDA may decide that our data are insufficient to

support approval and require additional pre-clinical, clinical or other studies, refuse to approve our products, or place restrictions on our ability to commercialize those products. Furthermore, products approved under the Animal Rule are subject to certain additional post-marketing requirements. We cannot guarantee that we will be able to meet this regulatory requirement even if one or more of our product candidates are approved under the Animal Rule.

The process of obtaining these regulatory approvals is expensive, often takes many years if approval is obtained at all, and can vary substantially based upon the type, complexity and novelty of the product candidate involved. Changes in the regulatory approval process may cause delays in the approval or other marketing authorization, or rejection of an application. There is a high rate of failure inherent in the medical product development process, and potential products that appear promising at early stages of development may fail for a number of reasons, and positive results from pre-clinical studies may not be predictive of similar results in human clinical trials. Similarly, promising results from earlier clinical trials of a product candidate may not be replicated in later clinical trials.

Failure to successfully develop future product candidates may materially adversely affect our business, financial condition, operating results and cash flows.

Unapproved and investigational stage products are also subject to the FDA's laws and regulations governing advertising and promotion, which prohibit the promotion of both unapproved products and unapproved uses of approved products. There is some risk that the FDA could conclude that our communications relating to unapproved products or unapproved uses of approved products constitute the promotion of an unapproved product or product use in violation of FDA laws and regulations. There is also a risk that a regulatory authority in another country could take a similar position under that country's laws and regulations and conclude that we have violated the laws and regulations related to product development, approval, or promotion in that country. If the FDA or any foreign regulatory authority determines that any of our communications constitute pre-approval promotion or promotion of an off-label use, FDA could request that we modify our promotional materials, issue an untitled letter or warning letter, or subject us to regulatory or enforcement actions, including injunction, seizure, civil fine or criminal penalties.

Even if we or our collaborators obtain marketing approvals for our product candidates, the conditions of approvals and ongoing regulation of our products may limit how we manufacture, market and sell our products, which could materially impair our ability to generate revenue.

Once marketing authorization has been granted, we and our business partners will remain subject to ongoing regulatory oversight of our medical products, including with respect to labeling; safety surveillance and reporting; registration and listing requirements; cGMP and QSR requirements relating to manufacturing, quality control, quality assurance, and corresponding maintenance of records and documents; advertising and promotional activities; requirements regarding the distribution of samples to physicians and related recordkeeping; medical device design, development and manufacturing.

The FDA and other agencies, including the U.S. Department of Justice (“DOJ”) and the HHS Office of Inspector General (“OIG”), closely regulate and monitor the marketing and promotion of medical products to ensure that they are marketed in a manner consistent with the FDA-approved label. For drugs products, we must promote the product in a manner consistent with the full prescribing information or, for 510(k) cleared devices, consistent with the cleared indication. The FDA, DOJ, and OIG impose stringent restrictions on manufacturers’ communications regarding unapproved/uncleared products and unapproved/uncleared uses of approved/cleared products. If we market unapproved/uncleared products or market our approved/cleared products for unapproved/uncleared indications, we may be subject to enforcement action. Violations of the FDCA and other statutes, including the False Claims Act, relating to the promotion and advertising of prescription products may lead to investigations and enforcement actions alleging violations of federal and state health care fraud and abuse laws, as well as state consumer protection laws.

Certain of our products are subject to post marketing requirements (“PMRs”), which we are required to conduct, and post marketing commitments, which we have agreed to conduct. The FDA has the authority to take action against sponsors who fail to meet the obligations of a PMR, including civil monetary penalties and/or misbranding charges.

In addition, discovery of previously unknown adverse events or other problems with our products, manufacturing partners or manufacturing processes, or failure to comply with regulatory requirements, may result in various penalties and sanctions. For all FDA-regulated products, if the FDA finds that a manufacturer has failed to comply with applicable laws and regulations, or that a product is ineffective or poses an unreasonable health risk, it can institute or seek a wide variety of enforcement actions and other remedies, including but not limited to:

- restrictions on such products, manufacturers or manufacturing processes;
- restrictions on the labeling or marketing of a product;
- restrictions on distribution or use of a product;

- requirements to conduct post-marketing studies or clinical trials;
- warning letters or untitled letters;
- refusal to approve pending applications or supplements to approved applications that are submitted;
- delay in or refusal to approve/clear/authorize pending PMA applications, 510(k) premarket submissions, or de novo authorization requests;
- fines, restitution or disgorgement of profits or revenues;
- suspension or withdrawal of marketing approvals;
- refusal to permit the import or export of our products;
- product seizure; and
- injunctions or the imposition of civil or criminal penalties.

If we and our collaborators are not able to comply with post-approval regulatory requirements, we could have the marketing approvals for our products withdrawn by regulatory authorities and our ability to market and sell any products could be limited, which could adversely affect our ability to achieve or sustain profitability. Further, the cost of compliance with post-approval regulations may have a negative effect on our operating results and financial condit

Any product candidate for which we or our collaborators obtain marketing approval could be subject to restrictions or withdrawal from the market and we may be subject to substantial penalties if we fail to comply with regulatory requirements or if we experience unanticipated problems with our product candidates, when and if any of them are approved.

Likewise, non-compliance with EU requirements regarding safety monitoring or pharmacovigilance, and with requirements related to the development of products for the pediatric population, can also result in significant financial penalties. Similarly, failure to comply with the EU and other legal and regulatory requirements regarding the protection of personal information can also lead to significant penalties and sanctions. Non-compliance with similar requirements in other foreign jurisdictions can also result in enforcement actions and significant penalties.

Current and future legislation may increase the difficulty and cost for us and any collaborators to obtain marketing approval of and commercialize our product candidates and may affect the prices we, or our collaborators, may obtain.

In the United States and foreign jurisdictions, there have been a number of legislative and regulatory changes and proposed changes regarding the health care system that could prevent or delay marketing approval of our product candidates, restrict or regulate post-approval activities and affect our ability to profitably sell any product candidates for which we obtain marketing approval. We expect that current laws, as well as other health care reform measures that may be adopted in the future, may result in more rigorous coverage criteria and additional downward pressure on the price that we, or any collaborators, may receive for any approved products.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Affordability Reconciliation Act (collectively, the ACA), passed in 2010 and substantially changed the way health care is financed by both governmental and private insurers, and significantly impacted the U.S. biopharmaceutical industry. However, some provisions of the ACA have yet to be fully implemented and certain provisions have been subject to legal and political challenges, as well as efforts by the last Presidential administration to repeal or replace certain aspects of the ACA. On January 28, 2021, however, the President issued an executive order to strengthen implementation of the ACA. Concurrently, Congress considered legislation that would repeal or repeal and replace all or part of the ACA. While Congress has not passed comprehensive repeal legislation, it has enacted laws that modify certain provisions of the ACA, such as removing penalties as of January 1, 2019 for not complying with the ACA's individual mandate to carry health insurance, delaying the implementation of certain ACA-mandated fees, and increasing the point-of-sale discount that is owed by pharmaceutical manufacturers who participate in Medicare Part D. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Prior to the Supreme Court's decision, the current Presidential administration issued an executive order initiating a special enrollment period during 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare. It is unclear how healthcare reform measures enacted by Congress or implemented by the current Presidential administration or other challenges to the ACA, if any, will impact the ACA or our business.

Additionally, there has been recent heightened federal governmental scrutiny over the manner in which manufacturers set prices for their marketed products. For example, there have been several recent Congressional inquiries and has been proposed and enacted federal and state legislation designed to, among other things, bring more transparency to drug pricing, review the relationship between pricing and manufacturer patient programs, and

reform government program reimbursement methodologies for drug products.

Further, the Inflation Reduction Act of 2022 (the “IRA”), was signed into law on August 16, 2022. While the IRA is still subject to rulemaking (with more information to come via guidance documents from the responsible federal agencies), the IRA, as written, will, among other changes, give the U.S. Department of Health and Human Services (the “HHS”) the ability and authority to directly negotiate with manufacturers the price that Medicare will pay for certain high-priced drugs. The IRA will also require manufacturers of certain Part B and Part D drugs to issue to HHS rebates based on certain calculations and triggers (i.e., when drug prices increase and outpace the rate of inflation). At this time, we cannot predict the implications the IRA provisions will have on our business. These types of laws may have a significant impact on our ability to set a product price we believe is fair and may adversely affect our ability to generate revenue and achieve or maintain profitability.

Additionally, in October 2020, HHS and the FDA published a final rule allowing states and other entities to develop a Section 804 Importation Program ("SIP"), to import certain prescription drugs from Canada into the United States. The final rule is currently the subject of ongoing litigation. At least six states (Vermont, Colorado, Florida, Maine, New Mexico, and New Hampshire) have passed laws allowing for the importation of drugs from Canada, and at least three states (Colorado, Florida, and New Mexico) have submitted SIPs to FDA for review and approval.

At the state level, individual states are increasingly aggressive in passing legislation and implementing regulations designed to control pharmaceutical and biological product pricing, including price or patient reimbursement constraints, discounts, restrictions on certain product access and marketing cost disclosure and transparency measures, and, in some cases, designed to encourage importation from other countries and bulk purchasing. A number of states, for example, require drug manufacturers and other entities in the drug supply chain, including health carriers, pharmacy benefit managers, and wholesale distributors, to disclose information about pricing of pharmaceuticals. In addition, regional health care authorities and individual hospitals are increasingly using bidding procedures to determine what pharmaceutical products and which suppliers will be included in their prescription drug and other health care programs. These measures could reduce the ultimate demand for our products, once approved, or put pressure on our product pricing. We expect that additional state and federal health care reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for health care products and services, which could result in reduced demand for our product candidates or additional pricing pressures.

If we fail to comply with foreign, federal, state and local health care laws, including fraud and abuse and health information privacy and security laws, and antitrust laws, we could face substantial penalties and our business, results of operations, financial condition and prospects could be adversely affected.

In the United States, certain of our products are reimbursed under federal and state health care programs such as Medicaid, Medicare, TriCare, and/or state pharmaceutical assistance programs. Many foreign countries have similar laws. Federal and state laws designed to prevent fraud and abuse under these programs prohibit pharmaceutical companies from offering valuable items or services to customers or potential customers to induce them to buy, prescribe, or recommend our product (the so-called “anti-kickback” laws). Exceptions are provided for discounts and certain other arrangements if specified requirements are met. Other federal and state laws, and similar foreign laws, not only prohibit us from submitting any false information to government reimbursement programs but also prohibit us, our employees, or any third party acting on our behalf from doing anything to cause, assist, or encourage our customers to submit false claims for payment to these programs. We are also subject to various federal, state and foreign antitrust and competition laws that prohibit certain activities that may have an impact against potential competitors. Violations of the various fraud and abuse and antitrust laws may result in severe penalties against the responsible employees and us, including jail sentences, large fines, and the exclusion of our products from reimbursement under federal and state programs. Some of the laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute makes it illegal for any person or entity, including a prescription drug manufacturer (or a party acting on its behalf) to knowingly and willfully solicit, receive, offer or pay remuneration, directly or indirectly, overtly or covertly, to induce, or in return for, either the referral of an individual, or the purchase, lease, prescribing or recommendation of an item, good, facility or service reimbursable by a federally funded health care program, such as the Medicare or Medicaid program. The term “remuneration” has been interpreted broadly and may constrain our marketing practices, educational programs, pricing policies and relationships with health care providers or other entities, among other activities;

- the federal False Claims Act imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for, among other things, knowingly presenting, or causing to be presented, false or fraudulent claims for payment by a federal health care program or making a false statement or record material to payment of a false claim or avoiding, decreasing or concealing an obligation to pay money to the federal government, with potential liability, including mandatory treble damages and significant per-claim penalties.
- the U.S. federal Health Insurance Portability and Accountability Act of 1996 (HIPAA), which imposes criminal and civil liability for, among other things, knowingly and willfully executing, or attempting to execute, a scheme to defraud any health care benefit program or obtain, by means of false or fraudulent pretenses, representations, or promises, any of the money or property owned by, or under the custody or control of, any health care benefit program, regardless of the payor (e.g., public or private) and knowingly and willfully falsifying, concealing or covering up by any trick or device a material fact or making any materially false statement, in connection with the delivery of, or payment for, health care benefits, items or services. A person or entity does not need to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation;
- HIPAA, as amended by HITECH, and their respective implementing regulations mandates, among other things, the adoption of uniform standards for the electronic exchange of information in common health care transactions, as well as standards relating to the privacy, security and transmission of individually identifiable health information, which require the adoption of administrative, physical and technical safeguards to protect such information. Among other things, HITECH makes HIPAA's security standards directly applicable to “business associates,” or independent contractors or agents of covered entities that create, receive or obtain protected health information in connection with providing a service for or on behalf of a covered entity;
- the Physician Payments Sunshine Act and its implementing regulations require certain manufacturers of drugs, biologics, medical devices and medical supplies for which payment is available under Medicare, Medicaid or the Centers for Medicare & Medicaid Services (CMS) to report certain payments and transfers of value made to U.S. physicians, other healthcare providers and teaching hospitals, and ownership or investment interests held by physicians, other healthcare providers and their immediate family members; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws, which may apply to items or services reimbursed by any third-party payor, including commercial insurers; state and foreign laws governing the privacy and security of health information in certain circumstances, many of which differ from each other in significant ways and may not have the same effect, thus complicating compliance efforts; state, local and foreign laws that require pharmaceutical companies to comply with the pharmaceutical industry’s voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government, obtain pharmaceutical agent licensure, and/or otherwise restrict payments that may be made to health care providers and entities; and state, local and foreign laws that require drug manufacturers to report information related to payments and other transfers of value to health care providers or entities, or marketing expenditures.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available under the federal Anti-Kickback Statute, it is possible that some of our business activities could be subject to challenges under one or more of such laws. Moreover, recent health care reform legislation has strengthened these laws. For example, the ACA, among other things, amends the intent requirement of the federal Anti-Kickback Statute and criminal health care fraud statutes, so that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it. In addition, the ACA provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the False Claims Act.

If our operations are found to be in violation of any of the laws described above or otherwise, we may be subject to penalties, including civil and criminal penalties, damages, fines, individual imprisonment, integrity obligations, exclusion from funded health care programs and the curtailment or restructuring of our operations. Any such penalties could adversely affect our financial results. We continue to improve our corporate compliance program designed to ensure that our development, marketing, and sales of existing and future products and product candidates are in compliance with all applicable laws and regulations, but we cannot guarantee that this program will protect us from governmental investigations or other actions or lawsuits stemming from a failure to comply with such laws or regulations. If any such actions are instituted against us and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

Efforts to ensure that our business arrangements with third parties will comply with health care laws and regulations will involve substantial costs. It is possible that governmental authorities will conclude that our business practices may not comply with current or future statutes, regulations or case law involving fraud and abuse or other health care laws and regulations. If our operations are found to be in violation of any of these laws, we may be subject to significant civil, criminal and administrative penalties, damages, fines, individual imprisonment, integrity obligations, exclusion from government funded health care programs, such as Medicare and Medicaid, and the curtailment or restructuring of our operations. If a third party fails to comply with applicable laws and regulations while acting on our behalf, we may also be subject to criminal, civil, and administrative penalties, including those listed above.

The United States government, state governments and private payors regularly investigate the pricing and competitive practices of pharmaceutical companies and biotechnology companies, and many file actions alleging that inaccurate reporting of prices has improperly inflated reimbursement rates. We may also be subject to investigations related to our pricing practices. Regardless of merit or eventual outcome, these types of investigations and related litigation can result in:

- Diversion of management time and attention;
- Significant legal fees and payment of damages or penalties;
- Limitations on our ability to continue certain operations;
- Decreased product demand; and
- Injury to our reputation.

Moreover, an adverse outcome, or the imposition of penalties or sanctions for failing to comply with the fraud and abuse and antitrust laws, could adversely affect us and may have a material adverse effect on our business, results of operations, financial condition and cash flows.

If we fail to comply with our obligations under U.S. governmental pricing programs, we could be required to reimburse government programs for underpayments and could pay penalties, sanctions and fines.

The issuance of regulations and coverage expansion by various governmental agencies relating to the Medicaid rebate program will continue to increase our costs and the complexity of compliance and will be time-consuming. Changes to the definition of average manufacturer price (AMP), and the Medicaid rebate amount under the ACA, the issuance of final regulations implementing those and other changes has affected and could further affect our 340B “ceiling price” calculations. Because we participate in the Medicaid rebate program, we are required to report average sales price (ASP), information to CMS for certain categories of drugs that are paid for under Part B of the Medicare program. Future statutory or regulatory changes or CMS binding guidance could affect the ASP calculations for our products and the resulting Medicare payment rate and could negatively impact our results of operations.

Pricing and rebate calculations vary among products and programs, involve complex calculations and are often subject to interpretation by us, governmental or regulatory agencies and the courts. The Medicaid rebate amount is computed each quarter based on our submission to CMS of our current AMP and “best price” for the quarter. If we become aware that our reporting for a prior quarter was incorrect, or has changed as a result of recalculation of the pricing data, we are obligated to resubmit the corrected data for a period not to exceed twelve quarters from the quarter in which the data originally were due. Any such revisions could have the impact of increasing or decreasing our rebate liability for prior quarters, depending on the direction of the revision. Such restatements and recalculations would increase our costs for complying with the laws and regulations governing the Medicaid rebate program. Price recalculations also may affect the “ceiling price” at which we are required to offer our products to certain covered entities, such as safety-net providers, under the 340B/Public Health Service ("PHS") drug pricing program.

In addition, if we are found to have made a misrepresentation in the reporting of ASP, we are subject to civil monetary penalties for each such price misrepresentation and for each day in which such price misrepresentation was applied. If we are found to have knowingly submitted false AMP or “best price” information to the government, we may be liable for civil monetary penalties per item of false information. Any refusal of a request for information or knowing provision of false

information in connection with an AMP survey verification would also subject us to civil monetary penalties. In addition, our failure to submit monthly/quarterly AMP or “best price” information on a timely basis could result in a civil monetary penalty per day for each day the information is late beyond the due date. Such failure could also be grounds for CMS to terminate our Medicaid drug rebate agreement, under which we participate in the Medicaid program. In the event that CMS terminates our rebate agreement, no federal payments would be available under Medicaid or Medicare Part B for our covered outpatient drugs. Governmental agencies may also make changes in program interpretations, requirements or conditions of participation, some of which may have implications for amounts previously estimated or paid. We cannot ensure that our submissions will not be found by CMS to be incomplete or incorrect.

In order for our products to be reimbursed by the primary federal governmental programs, we must report certain pricing data to the USG. Compliance with reporting and other requirements of these federal programs is a pre-condition to: (i) the availability of federal funds to pay for our products under Medicaid and Medicare Part B; and (ii) procurement of our products by the Department of Veterans Affairs ("DVA"), and by covered entities under the 340B/PHS program. The pricing data reported are used as the basis for establishing Federal Supply Schedule ("FSS"), and 340B/PHS program contract pricing and payment and rebate rates under the Medicare Part B and Medicaid programs, respectively. Pharmaceutical companies have been prosecuted under federal and state false claims laws for submitting inaccurate and/or incomplete pricing information to the government that resulted in increased payments made by these programs. Although we maintain and follow strict procedures to ensure the maximum possible integrity for our federal pricing calculations, the process for making the required calculations is complex, involves some subjective judgments and the risk of errors always exists, which creates the potential for exposure under the false claims laws. If we become subject to investigations or other inquiries concerning our compliance with price reporting laws and regulations, and our methodologies for calculating federal prices are found to include flaws or to have been incorrectly applied, we could be required to pay or be subject to additional reimbursements, penalties, sanctions or fines, which could have a material adverse effect on our business, financial condition and results of operations.

To be eligible to have our products paid for with federal funds under the Medicaid and Medicare Part B programs and purchased by certain federal agencies and grantees, we also must participate in the DVA FSS pricing program. To participate, we are required to enter into an FSS contract with the DVA, under which we must make our innovator “covered drugs” available to the “Big Four” federal agencies-the DVA, the DoD, the PHS (including the Indian Health Service), and the Coast Guard-at pricing that is capped under a statutory federal ceiling price ("FCP") formula set forth in Section 603 of the Veterans Health Care Act of 1992 ("VHCA"). The FCP is based on a weighted average wholesale price known as the Non-Federal Average Manufacturer Price ("Non-FAMP"), which manufacturers are required to report on a quarterly and annual basis to the DVA. Under the VHCA, knowingly providing false information in connection with a Non-FAMP filing can subject us to significant penalties for each item of false information. If we overcharge the government in connection with our FSS contract or Section 703 Agreement, whether due to a misstated FCP or otherwise, we are required to disclose the error and refund the difference to the government. The failure to make necessary disclosures and/or to identify contract overcharges can result in allegations against us under the False Claims Act and other laws and regulations. Unexpected refunds to the government, and responding to a government investigation or enforcement action, can be expensive and time-consuming, and could have a material adverse effect on our business, financial condition, results of operations and growth prospects.

From time to time, we sell unapproved MCMs to government entities under certain circumstances. While this is permissible in some cases, the extent to which we may be able to lawfully offer to sell and sell unapproved products in many jurisdictions may be unclear or ambiguous. Such sales could subject us to regulatory enforcement action, product liability and reputational risk.

Under certain and narrow circumstances, MCMs may be procured by government entities prior to approval by the FDA or other regulatory authorities, a practice which we follow in connection with certain MCMs, including AV7909 and TROBIGARD in the United States. In the United States, the Secretary of HHS has the authority to contract to purchase MCMs for the SNS prior to FDA approval of the relevant MCM in specified circumstances. FDA also has the authority to permit the emergency use of medical products that have not yet been approved by the FDA under an EUA. An EUA terminates when the EUA is revoked or the emergency declaration underlying the EUA terminates. An EUA is not a long-term alternative to obtaining FDA approval, licensure, clearance, or other marketing authorization for a product. An EUA has not been granted for TROBIGARD or AV7909. Absent an applicable exception, our MCM product candidates generally will have to be approved, licensed, or cleared by the FDA or other regulatory authorities in the relevant country through traditional pathways before we can sell those products to governments. Additionally, the laws in certain jurisdictions regarding the ability of government entities to purchase unapproved product candidates can be ambiguous, and the permissibility of exporting unapproved products from the United States and importing them to foreign countries may be unclear in some instances. Nevertheless, government bodies, such

as U.S. federal entities other than HHS, state and local governments within the United States, and foreign governments have sought and may further seek to procure our MCM product candidates that are not yet approved. In this situation, we would expect to assess the permissibility and liability implications of supplying our product candidates to such entities on a case-by-case basis, which presents certain challenges, both in the case of U.S. and foreign governments, and particularly under emergency conditions. In addition, agencies or branches of one country's government may take different positions regarding the permissibility of such sales than another country's government or even other agencies or branches of the same government. If local enforcement authorities disagree with our conclusion that such activities are permissible, they may take enforcement action against us.

In addition, the sale of unapproved products also could give rise to product liability claims for which we may not be able to obtain adequate indemnification or insurance coverage. For example, despite liability protections applicable to claims arising under U.S. law and resulting from the use of certain unlicensed or unauthorized MCMs, such as a declaration issued under the PREP Act, plaintiffs still may bring lawsuits, among other things, that their claims are not barred under the PREP Act.

In the event that a user of one or more of our products experiences an adverse event, we may be subject to additional reputational risk if the product has not been approved by the FDA or the corresponding regulatory authority of another country, particularly because we will not have approved labeling regarding the safety or efficacy of those products. In addition, legislatures and other governmental bodies that have oversight responsibility for procuring agencies may raise concerns after the fact, even if procurement was permissible at the time, which could result in negative publicity, reputational risk and harm to our business prospects.

There is also a risk that our communications with governments about our unapproved/uncleared products, such as in the procurement context, could be considered promotion of an unapproved/uncleared product or unapproved/uncleared use of an approved product. Therefore, there is a risk that we could be subject to enforcement actions if found to be in violation of such laws or regulations.

Even after regulatory approval is received, if we fail to comply with regulatory requirements, or if we experience unanticipated problems with our approved products, they could be subject to restrictions, penalties or withdrawal from the market.

Any vaccine, therapeutic product or medical device for which we obtain marketing approval, along with the manufacturing processes, post-approval clinical data, labeling, advertising and promotional activities for such product, will be subject to the continual requirements of and review by the FDA and other regulatory bodies. Our approved products are subject to these requirements and ongoing review. For drugs and vaccines, these requirements include submissions of safety and other post-marketing information and reports, plasma donor testing, registration requirements, cGMP, requirements relating to potency and stability, quality control, quality assurance, restrictions on advertising and promotion, import and export restrictions and recordkeeping requirements. Requirements for medical devices are similar and include QSR compliance, establishment registration and device listing; record keeping; restrictions on advertising and promotion; post-market surveillance, and restrictions on import and export. In addition, various state laws require that companies that manufacture and/or distribute drug products within the state obtain and maintain a manufacturer or distributor license, as appropriate. Some states have similar requirements for devices. Because of the breadth of these laws, it is possible that some of our business activities could be subject to challenge under one or more of such laws.

Government regulators enforce cGMP, QSR, and other requirements through periodic unannounced inspections of manufacturing facilities. The FDA is authorized to inspect domestic and foreign manufacturing facilities without prior notice at reasonable times and in a reasonable manner. Health Canada may conduct similar inspections of our domestic and foreign facilities where products offered and sold in Canada are produced, or related formulation and filling operations are conducted. The FDA, Health Canada, and other foreign regulatory agencies conduct periodic inspections of our facilities. Following several of these inspections, regulatory authorities have issued inspectional observations, some of which were significant, but all of which are being, or have been, addressed through corrective actions. If, in connection with any future inspection, regulatory authorities find that we are not in substantial compliance with all applicable requirements, or if they are not satisfied with the corrective actions we take, our regulators may undertake enforcement action against us, which may include:

- warning letters, untitled letters, and other communications;
- product seizure or withdrawal of the product from the market;
- restrictions on the marketing or manufacturing of a product;
- suspension or withdrawal of regulatory approvals or refusal to approve pending applications or other marketing submissions, or supplements to approved applications;

- fines or disgorgement of profits or revenue; and
- injunctions or the imposition of civil or criminal penalties.

Similar action may be taken against us should we fail to comply with regulatory requirements, or later discover previously unknown problems with our products or manufacturing processes. For instance, our products are tested regularly to determine if they satisfy potency and stability requirements for their required shelf lives. Failure to meet potency, stability or other specification requirements could result in delays in distributions, recalls or other consequences. In November 2022, a specific batch of our RSDL kits was recalled due to leakage, which could cause the product not to perform as effectively as intended.

Even if regulatory approval, clearance, or other marketing authorization of a product is granted, the approval, clearance, or marketing authorization may be subject to limitations on the indicated uses for which the product may be marketed or sold or to the conditions of approval. Regulatory approval or other authorization may also contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the product. If we experience any of these post-approval events, our business, financial condition, operating results and cash flows could be materially and adversely affected.

Additionally, companies may not promote unapproved products or unapproved uses of approved products (i.e. “off-label” uses or uses that are not described in the product’s approved labeling and/or that differ from the uses approved or cleared by the applicable regulatory agencies). A company that is found to have improperly promoted an unapproved/uncleared product or an unapproved/uncleared use of an approved/cleared product may be subject to significant liability, including civil and administrative remedies (such as entering into corporate integrity agreements with the USG), as well as criminal sanctions. If our employees or agents engage in marketing of an unapproved/uncleared product or the unapproved/uncleared use of an approved/cleared product, we could be subject to civil or criminal investigations and monetary and injunctive penalties, which could adversely impact our ability to conduct business in certain markets, negatively affect our business, financial condition, operating results and cash flows, and damage our reputation.

Failure to obtain or maintain regulatory approval in international jurisdictions could prevent us from marketing our products abroad and could limit the growth of our business.

We currently sell certain of our products outside the United States and intend to expand the countries in which we sell our products and have received market authorization under the mutual recognition procedure to sell BioThrax in France, Italy, the Netherlands, Poland, and the United Kingdom. To market or sell our products in foreign jurisdictions under normal circumstances, we generally need to obtain separate regulatory approvals and comply with numerous and varying requirements or use alternative “emergency use” or other exemptions from general approval and import requirements. Approval by the FDA in the United States or the mutual recognition procedure in the European member states does not ensure approval by all foreign regulatory authorities. The approval procedures in foreign jurisdictions can vary widely and can involve additional clinical trials and data review beyond that required by the FDA or under the mutual recognition procedure. There is also a risk that a regulatory authority in another country could conclude that we have violated the rules and regulations related to product development, approval or promotion in that country. Therefore, there is a risk that we could be subject to a foreign enforcement action if found to be in violation of such laws and regulations. We and our collaborators may not be able to obtain foreign regulatory approvals on a timely basis, if at all, and we may be unable to successfully commercialize our products in desired jurisdictions internationally if no alternate procurement pathway is identified for authorized government customers in a particular jurisdiction. We have limited experience in preparing, filing and prosecuting the applications necessary to gain foreign regulatory approvals and expect to rely on third-party contract research organizations and consultants to assist us in this process. Our reliance on third parties can introduce additional uncertainty into the process.

As of January 1, 2021, the Medicines and Healthcare products Regulatory Agency (the "MHRA"), became responsible for supervising medicines and medical devices in Great Britain, comprising England, Scotland and Wales under domestic law, whereas Northern Ireland will continue to be subject to European Union rules under the Northern Ireland Protocol. The MHRA will rely on the Human Medicines Regulations 2012 (SI 2012/1916) (as amended) (the "HMR"), as the basis for regulating medicines. The HMR has incorporated into the domestic law of the body of European Union law instruments governing medicinal products that pre-existed prior to the United Kingdom's withdrawal from the European Union. Any delay in obtaining, or an inability to obtain, any marketing approvals, as a result of Brexit or otherwise, may force us to restrict or delay efforts to seek regulatory approval in the United Kingdom for our product candidates, which could significantly and materially harm our business.

Laws and regulations governing international operations may preclude us from developing, manufacturing and selling certain products outside of the United States, require us to develop and implement costly

compliance programs, and if violated, can lead to financial and other impacts.

As we continue to expand our commercialization activities outside of the United States, we are subject to an increased risk of violating, and must dedicate additional resources towards avoiding inadvertently conducting activities in a manner that violates, the FCPA, the U.K. Bribery Act, Canada's Corruption of Foreign Public Officials Act, and other similar foreign anti-bribery laws that prohibit corporations and individuals from corruptly paying, offering to pay, or authorizing the payment of anything of value, directly or indirectly, to any foreign government official, government staff member, political party or party official, or political candidate in an attempt to influence a person working in an official capacity or otherwise obtain an improper advantage. The FCPA also obligates companies whose securities are listed in the United States to comply with certain accounting provisions requiring the Company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. Some anti-bribery laws also apply to private sector bribery. Compliance with the FCPA and other anti-bribery laws is expensive and difficult, particularly in countries in which corruption is a recognized problem. In addition, the FCPA presents particular challenges in the pharmaceutical industry, because, in many countries, hospitals and other parts of the health system are operated by the government, and doctors, hospital employees, and other health care providers are considered foreign officials. Certain payments to hospital employees and other health care professionals in connection with clinical trials and other work have been deemed to be improper payments to government officials and have led to FCPA enforcement actions.

Many countries, including the U.S., also have various lobbying laws and regulations governing the conduct of individuals and companies who interact with government officials. These laws and regulations typically include certain restrictions and disclosure obligations. If we, our employees, or third parties acting on our behalf do not comply with these laws and regulations, we may be subject to civil and criminal penalties.

Many countries, including the United States, restrict the export or import of products to or from certain countries through, for example, bans, sanction programs, and boycotts. Such restrictions may preclude us from supplying products in certain countries, which could limit our growth potential. Furthermore, if we, or third parties acting on our behalf, do not comply with these restrictions, we may be subject to civil and criminal penalties.

Various laws, regulations and executive orders also restrict the use and dissemination outside of the United States, or the sharing with certain non-U.S. nationals, of information classified for national security purposes, as well as certain products and technical data relating to those products. If we continue to expand our presence outside of the United States, it will require us to dedicate additional resources to comply with these laws, and these laws may preclude us from developing, manufacturing, or selling certain products and product candidates outside of the United States, which could limit our growth potential and increase our development costs.

The failure to comply with laws governing international business practices may result in substantial civil and criminal penalties, suspension or debarment from government contracting, and other sanctions, and can cause reputational harm. The SEC also may bring enforcement actions against issuers for violations of the FCPA's accounting provisions.

COMPETITIVE AND POLITICAL RISKS

Development and commercialization of pharmaceutical products, including for PHT preparedness, are routinely subject to evolving private and public sector competition.

The development and commercialization of new biopharmaceutical and medical technology products is highly competitive and subject to rapid technological advances. We will continue to face future competition from other companies and governments, universities and other non-profit research organizations in respect to our products, any products that we acquire, our current product candidates and any products we may seek to develop or commercialize in the future. The market for products can be subject to development of safer, more effective, more convenient or less costly products. The market for current products can also depend on what resources can be devoted to marketing or selling products, or how companies are positioned to adapt more quickly to new technologies, respond to scientific advances or patient preferences and needs, initiate or withstand substantial price competition and/or procure third-party licensing and collaborative arrangements.

There are a number of companies with products or product candidates addressing PHT preparedness that are competing with us for both USG procurement and development resources. Factors to consider include competitors' financial, technical, marketing and selling resources as well as potential leverage that their intellectual property estates may offer.

Any reduction in demand for our products or reduction or loss of development funding for our products or product candidates in favor of a competing product could lead to a loss of market share for our products and cause reduced revenues, margins and levels of profitability for us, which

could adversely affect our business, financial condition, operating results and cash flows.

Our biologic products may face risks of competition from biosimilar manufacturers.

Biological products and product candidates, which we refer to as "Biologic Products," can be affected by the approval and entry of "biosimilars" in the United States and other jurisdictions. Biosimilar products are licensed through an abbreviated pathway based on a showing that they are "highly similar" to a previously licensed product (known as the reference product) notwithstanding minor differences in clinically inactive components, and there are no clinically meaningful differences from the reference product in terms of safety, purity, and potency. Biologic Products in our current pipeline include AV7909, BioThrax, and ACAM2000. If a biosimilar version of one of our Biologic Products were approved, it could have a material adverse effect on the sales and gross profits of the affected Biologic Product and could adversely affect our business, financial condition, operating results and cash flows.

NARCAN® (naloxone HCl) is currently subject to generic competition and may be subject to additional branded and generic competition in the future.

NARCAN currently faces generic competition. In 2016, Teva Pharmaceuticals Industries Limited and Teva Pharmaceuticals USA (collectively, Teva) filed an Abbreviated New Drug Application (ANDA) seeking regulatory approval to market a generic version of NARCAN. In patent litigation related to Teva's ANDA filing, a trial Court decided in favor of Teva, and this decision was subsequently affirmed by the Court of Appeals for the Federal Circuit.

The FDA approved Teva's ANDA on April 19, 2019. On December 22, 2021, Teva commenced the launch of its generic naloxone nasal spray. As part of recent state settlements, including in Florida, Texas, Rhode Island, and West Virginia, Teva has agreed to supply Medication- Assisted Treatment (MAT) and generic opioid overdose reversal agents, like naloxone, to states at no cost in lieu of additional monetary compensation. The terms of these product donation agreements stretch 10 to 15 years.

NARCAN also faces generic competition from Perrigo UK FINCO Limited Partnership (Perrigo, now Padagis), which filed its own ANDA in 2018. Emergent settled with Perrigo on February 12, 2020 providing for a license effective upon the Teva litigation decision. In June 2022, the FDA approved the Padagis ANDA and Padagis launched its generic naloxone nasal spray.

Sales of generic versions of NARCAN at prices lower than our branded product or provided at no cost by Teva have the potential to erode our sales and could impact our product revenue related to NARCAN. For example, certain U.S. state laws allow for, and in some instances in the absence of specific instructions from the prescribing physician, mandate the dispensing of generic products rather than branded products where a generic version is available. In addition, in January 2019, the FDA released new proposed template Drug Facts Labels to assist sponsors of investigational naloxone nasal sprays and auto-injectors seeking approval from the FDA for over-the-counter naloxone products. In November 2022, the FDA announced its preliminary assessment that naloxone nasal spray products up to 4mg and naloxone auto-injector products for intramuscular or subcutaneous use up to 2mg have the potential to be approvable as safe and effective for nonprescription use.

NARCAN Nasal Spray also faces branded competition Kloxxado™, (naloxone HCl) nasal spray 8mg, a branded product developed by Hikma Pharmaceuticals, Inc., Amphastar Pharmaceuticals, Inc.'s naloxone injection product, Teleflex Medical Inc.'s Intranasal Mucosal Atomization Device and Zimhi™ (naloxone), a branded injectable product developed by Adamis.

In addition, Harm Reduction Therapeutics has announced filing of an NDA application for a 3mg naloxone nasal spray formulation intended for OTC use in opioid overdose reversal. NARCAN may face additional generic and branded competition in the future.

Political or social factors may delay or impair our ability to market and sell our products and may require us to spend significant management time and financial resources to address these issues.

Products developed to counter the potential impact of PHTs are subject to changing political and social environments. The political responses and social awareness of the risks of these threats on military personnel or civilians and the level of emphasis placed on such risks by the USG may vary over time. If the threat of terrorism were to decline, then the public perception of the risk on public health and safety may be reduced. This perception, as well as political or social pressures (including as a result of negative publicity we have received based on our longstanding ties to the USG), could delay or cause resistance to bringing our products in development to market or limit pricing or purchases of our products, any of which could negatively affect our revenues and our business, financial condition, operating results and cash flows.

In addition, substantial delays or cancellations of purchases could result from protests or challenges from third parties. Lawsuits brought against us by third parties or activists, even if not successful, could require us to spend significant management time and financial resources defending the related litigation and could potentially damage the public's perception of us and our products. Any publicity campaigns or other negative publicity may adversely affect the degree of market

acceptance of our MCMs and thereby limit the demand for our products, which would adversely affect our business, financial condition, operating results and cash flows.

We may not be able to obtain orphan drug exclusivity for product candidates we may develop, and even if we do, that exclusivity may not prevent the FDA or foreign regulatory authorities from approving other competing products.

Under the Orphan Drug Act, the FDA may designate a product as an orphan drug if it is a drug or biologic intended to treat a rare disease or condition. Generally, if a product candidate with an orphan drug designation subsequently receives the first marketing approval for the indication for which it has such designation, the product is entitled to a period of marketing exclusivity, which precludes the FDA from approving another marketing application for the same drug for the same rare disease or condition for that time period. The applicable period is seven years in the United States.

In order for the FDA to grant orphan drug designation to one of our products, the agency must find, among other requirements, that the product is being or will be investigated for a condition or disease with a patient population of fewer than 200,000 individuals in the United States, or, for a vaccine, diagnostic drug, or preventive drug, it will be administered to fewer than 200,000 persons per year in the United States. Alternatively, FDA may determine that there is no reasonable expectation that the costs of research and development of the drug can be recovered from sales of the drug in the United States. The FDA may conclude that the condition or disease for which we seek orphan drug designation does not meet this standard. Even if we obtain orphan drug exclusivity for a product, that exclusivity may not effectively protect the product from competition because different products can be approved for the same condition. In addition, even after a product receives orphan drug exclusivity, the FDA can subsequently approve the same product for the same condition if the FDA or such authorities conclude that the later product is clinically superior in that it is shown to be safer, more effective or makes a major contribution to patient care; if the FDA determines that the holder of orphan drug exclusivity cannot ensure the availability of sufficient quantities of the product to meet the needs of patients with the rare disease or condition; or if the holder of orphan drug exclusivity consents to the approval of such subsequent product. Additionally, the FDA may revoke orphan drug designation if the FDA determines that the request for designation contained an untrue statement of material fact, omitted material information, or the FDA subsequently finds that the drug in fact had not been eligible for orphan drug designation at the time of submission of the request for designation.

We face similar risks in the EU and other foreign jurisdictions that have comparable regulations concerning orphan drug exclusivity.

INTELLECTUAL PROPERTY RISKS

Protection of our intellectual property rights is an important tool for sustaining our business and the failure to do so could impact our financial condition, operating results, and cash flows.

We actively seek to protect intellectual property rights related to our Company's assets, including patent rights, trademark rights, trade secrets and proprietary confidential information, through defense and enforcement of existing rights and pursuit of protection on new and arising innovations.

Obtaining, maintaining and defending our intellectual property rights in the United States and other countries remains a critical component of the development and commercialization of our Company's assets.

Some of the risks associated with procurement, maintenance and enforcement of intellectual property rights include changes in patent laws or administrative patent office rules, evolving criteria and eligibility of obtaining patent protection on particular subject matter, the validity and enforceability of our intellectual property rights, the potential scope of coverage of our intellectual property rights, and/or the availability or strength of legal remedies in a particular country to defend and enforce intellectual property rights.

Other risks include associated costs, such as costs of patent prosecution and maintenance and costs associated with post-grant challenges. For example, such costs include *inter partes review* proceedings in the United States and oppositions in Europe, as well as costs associated with litigating and enforcing patent and trademark rights.

Additional risks include limitations on our extent or ability to procure, maintain or defend intellectual property rights associated with in-licensed or acquired intellectual property, where, for example, other parties (e.g., licensors) may have the first right to maintain or defend intellectual property rights in which we have an interest, or may pursue strategies that are divergent to the interest of our Company.

Third party claims of for patent infringement could impact our business, financial condition, operating results, and cash flows.

Claims by other parties of alleged patent infringement could delay, stop or affect the development and commercialization of our products and product candidates. Such challenges, while ongoing, could be costly, requiring and utilizing company resources. Such challenges, if successful, may impact marketing or launch

of products, or require ongoing license and/or royalty fees associated with potential settlement agreements. These may have the potential to materially harm our business, financial condition, operating results, and cash flows.

Intellectual property licenses with third parties carry risks of challenges, which may be costly and time consuming and could impact the commercialization of our products.

We are a party to a number of license agreements and expect to enter into additional license agreements in the future. Such license agreements or collaboration arrangements can be subject to challenges if interests or expectations under such license agreements diverge. Such challenges may be costly, risk time and resources, and could delay or impact development, commercialization or launch of our products.

Potential loss of proprietary information and know-how generally carries the risk of reducing the value of our technology and products.

We also rely upon unpatented proprietary technology, processes, and know-how, particularly as to our proprietary manufacturing processes. These types of confidential information and trade secrets can be difficult to protect. We seek to protect this confidential information, in part, through agreements with our employees, consultants, and third parties, as well as confidentiality policies and audits, although these may not always be successful in protecting our trade secrets and confidential information.

One or more of our products could be subject to early competition from generic drugs and biosimilars.

One or more of our products is approved as a drug product under the provisions of the FDCA, which may render it susceptible to potential competition from generic manufacturers via the Hatch-Waxman Act and ANDA process. Other of our products may be susceptible to challenges by entry of biosimilars through the route established under the Biologics Price Competition and Innovation Action of 2009.

Although we intend to vigorously enforce our intellectual property rights, there can be no assurance that we will prevail in our enforcement or defense of our patent rights. Our existing patents could be invalidated, found unenforceable, or found not to cover a generic form of our product.

RISKS RELATED TO RELIANCE ON OTHER PARTIES

The loss of any of our non-exclusive, sole-source or single source suppliers, a shortage of related supplies or an increase in the price of inventory supplied to us could have an adverse effect on our business, financial condition and results of operations.

We purchase certain supplies used in our manufacturing processes from non-exclusive, or single sources due to quality considerations, costs or constraints resulting from regulatory requirements. We depend on certain single-source suppliers for key materials and services necessary to manufacture the majority of our products and certain product candidates. For example, we rely on a single-source supplier to provide us with Alhydrogel in sufficient quantities to meet our needs to manufacture AV7909 and BioThrax vaccines and the specialty plasma in our hyperimmune specialty plasma products and certain ingredients for the ACAM2000 vaccine. We also rely on single-source suppliers for the materials necessary to produce NARCAN, such as the naloxone active pharmaceutical ingredient and other excipients, along with the vial, stopper and device.

Where a particular single-source supply relationship is terminated, we may not be able to establish additional or replacement suppliers for certain components or materials quickly. This is largely due to the FDA approval system, which mandates validation of materials prior to use in our products and product candidates, and the complex nature of manufacturing processes. In addition, we may lose a sole-source supplier due to, among other things, the acquisition of a supplier by a competitor (which may cause the supplier to stop selling its products to us) or the bankruptcy of such a supplier, which may cause the supplier to cease operations. Any reduction or interruption by a sole-source supplier of the supply of materials or key components used in the manufacturing of our products or product candidates, a reduction in quality or an increase in the price of those materials or components could adversely affect us. If we are unable to locate or establish alternative suppliers, our ability to manufacture our products and product candidates could be adversely affected and could harm our revenues, cause us to fail to satisfy contractual commitments, lead to a termination of one or more of our contracts or lead to delays in our clinical trials, any of which could be costly to us and otherwise materially harm our business, financial condition, operating results and cash flows.

We depend on third parties to conduct many of our clinical and non-clinical trials. If these third parties do not perform as contractually required or as we expect, we may not be able to obtain regulatory approval for or commercialize our product candidates and, as a result, our business, financial condition, operating results and cash flows may suffer.

We depend on third parties, such as independent clinical investigators, contract research organizations and other third-party service providers to conduct the clinical and non-clinical trials of our product candidates and expect to continue to do so. We rely heavily on these third parties for successful execution of our clinical and non-clinical trials, but do not exercise day-to-day control over their activities. Our reliance on these service providers

does not relieve us of our regulatory responsibilities, including ensuring that our trials are conducted in accordance with good clinical practice regulations and the plan and protocols contained in the relevant regulatory application. In addition, these organizations may not complete these activities on our anticipated or desired timeframe. We also may experience unexpected cost increases that are beyond our control. Problems with the timeliness or quality of the work of a contract research organization or other third party may lead us to seek to terminate the relationship and use an alternative service provider, which may prove difficult, costly and result in a delay of our trials. Any delay in or inability to complete our trials could delay or prevent the development, approval and commercialization of our product candidates.

In certain cases, government entities and NGOs conduct studies of our product candidates, and we may seek to rely on these studies in applying for marketing approval for certain of our product candidates. These government entities and NGOs have no obligation or commitment to us to conduct or complete any of these studies or clinical trials and may choose to discontinue these development efforts at any time. Furthermore, government entities depend on annual Congressional appropriations to fund their development efforts, which may not be approved.

If we are unable to obtain any necessary third-party services on acceptable terms or if these service providers do not successfully carry out their contractual duties or meet expected deadlines, our efforts to obtain regulatory approvals for our product candidates may be delayed or prevented.

LEGAL AND REPUTATIONAL RISKS

Our financial condition and operating results could be adversely impacted by unfavorable results of legal proceedings or government investigations.

We are subject to various claims, legal proceedings and government investigations that have not yet been fully resolved, including stockholder derivative and putative class action lawsuits, and new matters may arise in the future. In addition, agreements entered into by us sometimes include indemnification provisions which can subject us to costs and damages in the event of a claim against an indemnified third party. The number of claims, legal proceedings and government investigations involving us, and the alleged magnitude of such claims, proceedings and government investigations, has generally increased over time and may continue to increase. Certain of these actions include, and future actual or threatened legal actions may include, claims for substantial and indeterminate amounts of damages, or may result in other actions adverse to us.

For example, multiple purported class action lawsuits have been filed against us and certain of our current and former senior officers in the United States District Court for the District of Maryland seeking unspecified damages on behalf of a putative class of persons who purchased or otherwise acquired shares of our common stock during various date ranges. The complaints, allege, among other things, that we made materially false and misleading statements regarding our procedures and quality controls relating to vaccine production, in violation of federal securities laws. As another example, multiple stockholder derivative lawsuits were filed in The Court of Chancery of the State of Delaware and the United States District Court for the District of Maryland on behalf of the Company against certain current and former officers and directors for breach of fiduciary duties, waste of corporate assets, unjust enrichment and insider trading, each allegation related to the Company's capabilities to manufacture COVID-19 vaccine bulk drug substance. In addition to monetary damages, the complaints seek the implementation of multiple corporate governance and internal policy changes.

Regardless of merit, litigation can be both time-consuming and disruptive to our operations and cause significant expense and diversion of management's attention. The outcome of litigation or government investigations is also inherently uncertain. If one or more legal matters were resolved against us or an indemnified third party in a reporting period for amounts above management's expectations, our financial condition and operating results for that reporting period could be materially adversely affected. Further, such an outcome could result in significant compensatory, punitive or trebled monetary damages, disgorgement of revenue or profits, remedial corporate measures or injunctive relief against us and could require us to change our business practices or limit our ability to offer certain products and services, all of which could materially adversely affect our financial condition and operating results. While we maintain insurance coverage for certain types of claims, such insurance coverage may be insufficient to cover all losses or all types of claims that may arise.

We rely significantly on information technology systems and any failure, inadequacy, interruption or security lapse of that technology, including any cyber security incidents, could harm our ability to operate our business effectively or result in data leakage of proprietary and confidential business and employee information.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal and external communications. We previously contracted with the USG and pharmaceutical companies for the development and manufacture of a significant quantity of COVID-19 vaccines which, raised our security profile, and heightened potential risks that malicious actors may seek to disrupt our systems or misappropriate our information. The size

and complexity of our computer systems make them potentially vulnerable to interruption, invasion, computer viruses, destruction, malicious intrusion and additional related disruptions, which may result in the impairment of production and key business processes. Our systems are also potentially vulnerable to data security breaches through employee error, phishing scams and malfeasance, which may expose sensitive data to unauthorized persons. No system of protection is adequate to protect against all such threats, even if they are deemed to be industry standard, and there can be no assurance that we will be able to repel any such attacks. Data security breaches could lead to the loss of trade secrets or other intellectual property or the public exposure of personal information, including sensitive personal information, of our employees, clinical trial patients, customers and others. Responding to any such threats may also be expensive and time-consuming.

A significant business disruption or a breach in security resulting in misappropriation, theft or sabotage with respect to proprietary and confidential business and employee information could result in significant financial losses, legal, business or reputational harm to us, compromise our business prospects and our commitments to the USG or other customers, any of which could materially and adversely affect our business, financial condition and operating results.

We face product liability exposure, which could cause us to incur substantial liabilities and negatively affect our business, financial condition and results of operations.

We face an inherent risk of product liability exposure related to the sale of our products, any other products that we successfully acquire or develop and the testing of our product candidates in clinical trials.

One measure of protection against such lawsuits is coverage under the PREP Act, which was signed into law in December 2005. The PREP Act creates liability protection for manufacturers of biodefense countermeasures when the Secretary of HHS issues a declaration for their manufacture, administration or use. A PREP Act declaration is meant to provide liability protection from all claims under federal or state law for loss arising out of the administration or use of a covered countermeasure under a government contract. The Secretary of HHS has issued PREP Act declarations covering countermeasures for smallpox, mpox, and other orthopox; anthrax; and botulinum toxin. These declarations apply to certain of our products, namely BioThrax, ACAM2000, raxibacumab, Anthrasil, BAT and VIGIV products, as covered countermeasures. Manufacturers are not entitled to protection under the PREP Act in cases of willful misconduct or for cases brought in non-U.S. tribunals or under non-U.S. law. We cannot predict whether the Secretary of HHS will renew the declarations when they expire, whether Congress will fund the relevant PREP Act compensation programs, or whether the necessary prerequisites for immunity would be triggered with respect to our products or product candidates.

Additionally, certain of our products, namely BioThrax and RSDL, are under the SAFETY Act, which provides certain product liability limitations for qualifying anti-terrorism technologies for claims arising from or related to an act of terrorism. Although BioThrax and RSDL are designated and certified under the SAFETY Act, the law may not provide adequate protection from claims made against us.

If we cannot successfully defend ourselves against future claims that our products or product candidates caused injuries and if we are not entitled to indemnity by the USG, or the USG does not honor its obligations to us under the PREP Act or SAFETY Act, or if the liability protections under the PREP Act and SAFETY Act are not adequate to cover all claims, we may incur substantial liabilities. Regardless of merit or eventual outcome, product liability claims may result in:

- decreased demand or withdrawal of a product;
- injury to our reputation;
- withdrawal of clinical trial participants;
- costs to defend the related litigation;
- substantial monetary awards to trial participants or patients;
- loss of revenue; and
- an inability to commercialize products that we may develop.

The amount of insurance that we currently hold may not be adequate to cover all liabilities that we may incur. Further product liability insurance may be difficult and expensive to obtain. We may not be able to maintain insurance coverage at a reasonable cost and we may not be able to obtain insurance coverage that will be adequate to satisfy all potential liabilities. For example, we may not have sufficient insurance against potential liabilities associated with a possible large-scale deployment of BioThrax vaccine as a countermeasure to a bioterrorism threat. We rely on PREP Act protection for BioThrax, raxibacumab, ACAM2000, Anthrasil, BAT and VIGIV products, and SAFETY Act protection for BioThrax and RSDL products in addition to our insurance coverage to help mitigate our product liability exposure for these products. Additionally, potential product liability claims related to our commercial products, including NARCAN, Vivotif and Vaxchora, may be made by patients, health care providers or others who sell or consume these products. Such claims may be made even with respect to those products that possess regulatory approval for commercial sale. Claims or losses in excess of our product liability insurance coverage could have a material adverse effect on our business, financial condition, operating results and cash flows.

FINANCIAL RISKS

We have incurred significant indebtedness in connection with our acquisitions and servicing our debt requires a significant amount of cash. We may not have sufficient cash flow from our operations to pay our substantial debt.

Our ability to make scheduled payments of the principal of, to pay interest on or to further refinance our indebtedness depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. We may also seek additional debt financing to support our ongoing activities or to provide additional financial flexibility. Debt financing can have significant adverse consequences for our business, including:

- requiring us to dedicate a substantial portion of cash flows from operations to payment on our debt, which would reduce available funds for other corporate initiatives;
- increasing the amount of interest that we have to pay on debt with variable interest rates, if market rates of interest increase, to the extent we are unable to offset such risk through our hedging instruments;
- subjecting us, as under our Senior Secured Credit Facilities and the indenture governing the Senior Unsecured Notes, to restrictive covenants that reduce our ability to take certain corporate actions, acquire companies, products or technology, or obtain further debt financing;
- requiring us to pledge our assets as collateral, which could limit our ability to obtain additional debt financing;
- limiting our flexibility in planning for, or reacting to, general adverse economic and industry conditions; and
- placing us at a competitive disadvantage compared to our competitors that have less debt, better debt servicing options or stronger debt servicing capacity.

We may not have sufficient funds or be able to obtain additional financing to pay the amounts due under our indebtedness. In addition, failure to comply with the covenants under our Senior Secured Credit Facilities and other debt agreements, including the maintenance of a specified consolidated net leverage ratio and debt service coverage ratio under our Senior Secured Credit Facilities, could result in an event of default under those agreements. An event of default could result in the acceleration of amounts due under a particular debt agreement and a cross default and acceleration under other debt agreements, and we may not have sufficient funds to pay or be able to obtain additional financing to make any accelerated payments. We were not in compliance with the net leverage ratio and debt service coverage ratio covenants under our Senior Secured Credit Facilities as of December 31, 2022. We received a limited waiver from compliance with these covenants for the quarter ended December 31, 2022 and the quarter ending March 31, 2023. The Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to the Credit Agreement. If we default under the Credit Agreement or our other debt arrangements, our lenders could seek to enforce security interests in our assets securing our indebtedness.

Our current indebtedness restricts and any additional debt financing may restrict the operation of our business and limit the cash available for investment in our business operations. If we are unable to refinance our Senior Secured Credit Facilities prior to their maturity in October 2023, our results of operations and financial condition may be adversely affected.

The Senior Secured Credit Facilities include a $450.0 million Term Loan Facility which had an outstanding principal balance of $362.8 million as of December 31, 2022 and the ability to borrow up to $600.0 million under our Revolving Credit Facility of which we had $598.0 million of outstanding borrowings as of December 31, 2022. On August 7, 2020, we completed an offering of $450.0 million aggregate principal amount of Senior Unsecured Notes, of which $353.0 million of the net proceeds were used to pay down our Revolving Credit Facility. We may also seek additional debt financing to support our ongoing activities or to provide additional financial flexibility. Debt financing can have significant adverse consequences for our business, including:

- the level, timing and cost of product sales and CDMO services;
- the extent to which we acquire or invest in and integrate companies, businesses, products or technologies;
- the acquisition of new facilities and capital improvements to new or existing facilities;
- the payment obligations under our indebtedness;
- the scope, progress, results and costs of our development activities;
- our ability to obtain funding from collaborative partners, government entities and non-

governmental organizations for our development programs;

- the extent to which we repurchase common stock under any future share repurchase program; and
- the costs of commercialization activities, including product marketing, sales and distribution.

Our Senior Secured Credit Facilities mature in October 2023. If we are unable to refinance our Senior Secured Credit Facilities prior to their maturity, we will be required to immediately repay the entire amount outstanding thereunder, which could adversely affect our results of operations and financial condition.

In addition, our Senior Secured Credit Facilities and our Senior Unsecured Notes each contain cross-default provisions whereby a default under one agreement would likely result in cross defaults under agreements covering other indebtedness. The occurrence of a default under any of these arrangements would permit the holders of the notes or the lenders under our Senior Secured Credit Facilities to declare all amounts outstanding under those borrowing arrangements to be immediately due and payable, and there is no assurance that we would have sufficient funds to satisfy any such accelerated obligations.

As of December 31, 2022, the Company was not in compliance with the debt service charge ratio and consolidated net leverage ratio covenants under the Credit Agreement. Pursuant to the Credit Agreement Amendment (as defined below) the requisite lenders have agreed to a limited waiver of any defaults or events of default that result from (a) any violation of the financial covenants set forth in the Senior Secured Credit Facilities with respect to the fiscal quarter ending December 31, 2022 and the fiscal quarter ending March 31, 2023 and (b) the going concern qualification or exception contained in the audited financial statements for the fiscal year ending December 31, 2022. This limited waiver will expire on the earlier to occur of (i) any other event of default and (ii) April 17, 2023. During this period the Company is working with lenders under the Senior Secured Credit Facilities in connection with replacing such facilities before their October 2023 maturity with revised terms and conditions. The Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to the Credit Agreement.

Our hedging program is subject to counterparty default risk.

We manage our interest rate risk in part by entering into interest rate swaps with a number of counterparties to swap a portion of our indebtedness that is based on variable interest rates to a fixed rate. As a result, we are subject to the risk that the counterparty to one or more of these contracts defaults on its performance under the contract. During an economic downturn, the counterparty's financial condition may deteriorate rapidly and with little notice and we may be unable to take action to protect our exposure. In the event of a counterparty default, we could incur losses, which may harm our business and financial condition. In the event that one or more of our counterparties becomes insolvent or files for bankruptcy, our ability to eventually recover any losses suffered as a result of that counterparty's default may be limited by the liquidity of the counterparty.

We require significant additional funding to be able to continue as a going concern and we may be unable to raise capital when needed or on acceptable terms, which would harm our ability to grow our business, and our results of operations and financial condition. In addition, any capital we raise may result in dilution to our current stockholders.

As of December 31, 2022, we had unrestricted cash and cash equivalents of $642.6 million and remaining capacity under our Revolving Credit Facility of $0.7 million. Also as of December 31, 2022, there was $598.0 million outstanding under our Revolving Credit Facility and $362.8 million under our Term Loan Facility that mature in October 2023, which is within one year of the date that the Company's consolidated financial statements are issued for the year ended December 31, 2022. As a result, the Company determined that there is substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued. We will need to obtain substantial additional funding in connection with our continuing operations, which cannot be assured.

If our capital resources are insufficient to meet our future capital requirements, we will need to finance our cash needs through public or private equity or debt offerings, bank loans or collaboration and licensing arrangements. In August 2021, we filed an automatic shelf registration statement, which immediately became effective under SEC rules. For so long as we continue to satisfy the requirements to be deemed a "well-known seasoned issuer" under SEC rules, this shelf registration statement, effective until August 9, 2024, allows us to issue an unrestricted amount of equity, debt and certain other types of securities through one or more future primary or secondary offerings. If we do not file a new shelf registration statement prior to the expiration of our automatic shell registration statement (whether by lapse of time due to us no longer qualifying as a "well-known seasoned issuer"), the existing shelf registration statement will expire, and we will not be able to publicly raise capital or issue debt until a new registration statement is filed and becomes effective. There can be no assurance that we will be eligible to file an automatically effective shelf registration statement at a future date when we may need to raise funds publicly.

If we raise funds by issuing equity securities, our stockholders may experience dilution. Debt financing, if available, may involve agreements that include covenants, like those contained in our Senior Secured Credit Facilities and the indenture governing the Senior Unsecured Notes, limiting or restricting our ability to take specific actions, such as incurring additional debt, making capital expenditures, pursuing acquisition opportunities or declaring dividends. If we raise funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish valuable rights to our technologies or product candidates or grant licenses on terms that may not be favorable to us. Our Senior Secured Credit Facilities as well as the indenture governing the Senior Unsecured Notes restrict our ability to incur additional indebtedness.

Economic conditions may make it difficult to obtain financing on attractive terms, or at all. If financing is unavailable or lost, our business, operating results, financial condition and cash flows would be adversely affected, and we could be forced to delay, reduce the scope of or eliminate many of our planned activities.

We may not maintain profitability in future periods or on a consistent basis.

Although we have been profitable on an annual basis since becoming a public company, we have not been profitable for every quarter during that time. Our profitability has been substantially dependent on product sales, which historically have fluctuated significantly from quarter to quarter, and we expect that they will continue to fluctuate significantly based primarily on the timing of our fulfillment of orders from the USG. We may not be able to achieve consistent profitability on a quarterly basis or sustain or increase profitability on an annual basis.

Goodwill impairment charges in the future could have a material adverse effect on our business, results of operations and financial condition.

We have recorded a significant amount of goodwill on our consolidated balance sheet as a result of acquisitions. We review the recoverability of goodwill annually and whenever events or circumstances indicate that the carrying value of a reporting unit may not be recoverable. As of December 31, 2022, the only reporting unit that has goodwill associated with it is our MCM reporting unit.

The impairment tests require us to make an estimate of the fair value of our reporting units. An impairment could be recorded as a result of changes in assumptions, estimates or circumstances, some of which are beyond our control. Since a number of factors may influence determinations of fair value of goodwill, we are unable to predict whether impairments of goodwill will occur in the future, and there can be no assurance that continued conditions will not result in future impairments of goodwill.

The future occurrence of a potential indicator of impairment could include matters such as (i) a decrease in expected net earnings, (ii) adverse equity market conditions, (iii) a decline in current market multiples, (iv) a decline in our common stock price, (v) a significant adverse change in legal factors or the general business climate, and (vi) an adverse action or assessment by a regulator. Any such impairment would result in us recognizing a non-cash charge in our consolidated balance sheets, which could adversely affect our business, results of operations and financial condition.

The expansion of our international operations increases our risk of exposure to credit losses.

As we continue to expand our business activities with foreign governments in certain countries that have experienced deterioration in credit and economic conditions or otherwise, our exposure to uncollectible accounts will rise. Global economic conditions and liquidity issues in certain countries have resulted and may continue to result in delays in the collection of accounts receivable and may result in credit losses. Future governmental actions and customer specific actions may require us to re-evaluate the collectability of our accounts receivable and we may potentially incur credit losses that materially impact our operating results.

A substantial portion of our indebtedness bears interest at variable interest rates based on LIBOR and certain of our financial contracts are also indexed to LIBOR. Changes in the method of determining LIBOR, or the replacement of LIBOR with an alternative reference rate, may adversely affect interest rates on our current or future indebtedness and may otherwise adversely affect our financial condition and results of operations.

In July 2017, the Financial Conduct Authority, the authority that regulates the London Inter-bank Offered Rate (LIBOR) announced that it intended to stop compelling banks to submit rates for the calculation of LIBOR after 2021.

On December 31, 2021, the International Exchange (ICE) Benchmark Association, which administrates LIBOR, ceased (i) entering into new contracts that use LIBOR as a reference rate and (ii) publication of two LIBOR rates (one-week and two-month) and has announced that the remaining LIBOR rates (overnight, one-month, three-month, six-month and 12-month) will be retired on June 30, 2023. It is unclear if LIBOR will cease to exist at that time or if new methods of calculating LIBOR will be established such that it continues to exist after 2023. We have certain financial contracts, including the Amended Credit Agreement and our interest rate swaps, that are indexed to LIBOR. Changes in the method of determining LIBOR, or the replacement of LIBOR with an alternative reference rate, may adversely affect interest rates on our current or future indebtedness. Any transition process may involve, among other things, increased volatility or

illiquidity in markets for instruments that rely on LIBOR, reductions in the value of certain instruments or the effectiveness of related transactions such as hedges, increased borrowing costs, uncertainty under applicable documentation, or difficult and costly consent processes. The transition away from LIBOR may result in increased expenses, may impair our ability to refinance our indebtedness or hedge our exposure to floating rate instruments, or may result in difficulties, complications or delays in connection with future financing efforts, any of which could adversely affect our financial condition and results of operations.

We have identified a material weakness in our internal control over financial reporting, and our ability to provide accurate and timely financial reporting could be affected if it is not effectively remediated or if additional material weaknesses are identified.

As described in Item 9A, "Controls and Procedures – Management's Report on Internal Control Over Financial Reporting" of this Annual Report on Form 10-K, during the process of preparing the financial statements as of and for the year ended December 31, 2022, our management [and auditor] determined that our internal control over financial reporting included a material weakness as of December 31, 2022 related to our inventory accounting. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim consolidated financial statements will not be prevented or detected on a timely basis. The material weakness related to our internal control over financial reporting related to the capitalization of inventory. Due to the existence of this material weakness, our management concluded that as of December 31, 2022 our internal control over financial reporting was not effective.

We are taking steps to remediate this material weakness, including documenting a formal policy on the accounting for pre-paunch materials purchased for use in R&D activities, providing additional training related to the new policy, implementing a monthly control to review pre-launch inventory with corporate finance to ensure proper accounting treatment. However, we cannot provide any assurance that the measures we have taken to date and we intend to implement will be sufficient to remediate the material weakness we have identified or to avoid additional material weaknesses from occurring in the future. If we are unable to remediate the material weakness or any additional material weaknesses or other deficiencies in our internal control over financial reporting are identified in the future, or we otherwise fail to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act, we may not be able to produce accurate and timely financial statements or certify that information required to be disclosed by us in the reports that we file with the SEC is recorded, processed, summarized, and reported within the time periods specified in SEC rules and forms. Any failure of our internal control over financial reporting or disclosure controls and procedures could cause our investors to lose confidence in our publicly reported information, cause the market price of our stock to decline, harm our reputation, expose us to sanctions or investigations by the SEC or other regulatory authorities, or otherwise adversely impact our results of operations.

RISKS RELATED TO STRATEGIC ACQUISITIONS, DIVESTITURES AND COLLABORATIONS

Our strategy of generating growth through acquisitions may not be successful.

Our business strategy includes growing our business through acquisition and in-licensing transactions. For example, in September 2022, we completed the acquisition from Chimerix, Inc. of its exclusive worldwide rights to brincidofovir, including TEMBEXA® and related assets. We may not be successful in identifying, effectively evaluating, structuring, acquiring or in-licensing, and developing and commercializing additional products on favorable terms, or at all. Competition for attractive product opportunities is intense and may require us to devote substantial resources, both managerial and financial, to an acquisition opportunity. A number of more established companies are also pursuing strategies to acquire or in-license products in the biopharmaceutical field. These companies may have a competitive advantage over us due to their size, cash resources, cost of capital, effective tax rate and greater clinical development and commercialization capabilities.

Acquisition efforts can consume significant management attention and require substantial expenditures, which could detract from our other programs. In addition, we may devote significant resources to potential acquisitions that are never completed. Even if we are successful in acquiring a company or product, it may not result in a successfully developed or commercialized product or, even if an acquired product is commercialized, competing products or technologies could render a product noncompetitive, uneconomical or obsolete. Moreover, the cost of acquiring other companies or in-licensing products could be substantial, and in order to acquire companies or new products, we may need to incur substantial debt or issue dilutive securities.

If we are unsuccessful in our efforts to acquire other companies, products, or in-license and develop additional products, or if we acquire or in-license unproductive assets, it could have a material adverse effect on the growth of our business, and we could be compelled to record significant impairment charges to write-down the carrying value of our acquired intangible assets, which could materially harm our business, financial condition, operating results and cash flows.

Our failure to successfully integrate acquired businesses and/or assets into our operations could adversely affect our ability to realize the benefits of such acquisitions and, therefore, to grow our business.

We may not be able to integrate any acquired business successfully or operate any acquired business profitably. In addition, cost synergies, if achieved at all, may be less than we expect, or may take greater time to achieve than we anticipate.

Issues that could delay or prevent successful integration or cost synergies of an acquired business or products include, among others:

- retaining existing customers and attracting new customers;
- retaining key employees;
- diversion of management attention and resources;
- conforming internal controls, policies and procedures, business cultures and compensation programs;
- consolidating corporate and administrative infrastructures;
- successfully executing technology transfers and obtaining required regulatory approvals;
- consolidating sales and marketing operations;
- identifying and eliminating redundant and underperforming operations and assets;
- assumption of known and unknown liabilities;
- coordinating geographically dispersed organizations;
- managing tax costs or inefficiencies associated with integrating operations; and
- risks associated with intellectual property rights related to an acquisition or collaboration.

If we are unable to successfully integrate pending and future acquisitions with our existing businesses, or operate any acquired business profitably, we may not obtain the advantages that the acquisitions were intended to create, which may materially adversely affect the growth of our business, financial condition, operating results and cash flows.

Our proposed sale of our travel health business to Bavarian Nordic may not be consummated and if the transaction is consummated we may not realize the benefit of the proposed transaction.

On February 15, 2023, we entered into the Sale Agreement with Bavarian Nordic, under which we agreed to sell our travel health business, including rights to Vaxchora and Vivotif, as well as our development-stage chikungunya vaccine candidate CHIKV VLP, our manufacturing site in Bern, Switzerland and certain of our development facilities in San Diego, California for a cash purchase price of $270.0 million, subject to certain customary adjustments. In addition, we may receive milestone payments of up to $80.0 million related to the development of CHIKV VLP and receipt of marketing approval and authorization in the U.S. and Europe, and sales-based milestone payments of up to $30.0 million based on aggregate net sales of Vaxchora and Vivotif in calendar year 2026. The transaction is expected to close in the second quarter of 2023, subject to certain customary closing conditions.

There can be no assurance that we will be able to close the sale of our travel health business to Bavarian Nordic. If we are unable to consummate the transaction or do not realize the expected strategic, economic, or other benefits of the transaction, it could adversely affect our business and financial position.

In addition, we have incurred, and will continue to incur, significant expenses in connection with the proposed sale of our travel health business to Bavarian Nordic. These expenses include fees and expenses for investment bankers, attorneys, accountants and other advisers in connection with our efforts and will be incurred whether or not an acquisition is consummated. The incurrence of these costs could adversely affect our financial results for particular quarterly or annual periods.

RISKS RELATED TO OWNERSHIP OF OUR COMMON STOCK

Our business or our share price could be negatively affected as a result of the actions of shareholders.

In recent years, some shareholders have placed increasing pressure on publicly traded companies in our industry and others to effect changes to corporate governance practices, executive compensation practices, social and environmental practices and to undertake certain corporate actions. This may be true even if they only hold a minority of shares. In addition, many institutional investors are increasingly focused on ESG factors. These investors may be seeking enhanced ESG disclosures or to implement policies adverse to our business. There can be no assurances that shareholders will not publicly advocate for us to make corporate governance changes or engage in certain corporate actions. Responding to challenges from shareholders, such as proxy contests, media campaigns or other public or private means, could be costly and time consuming and could have an adverse effect on our reputation and divert the attention and resources of management and our board, which could have an adverse effect on our

business and operational results. Any such shareholder actions or requests, or the mere public presence of shareholders with a reputation for taking such actions among our shareholder base, could also cause the market price of our common stock to experience periods of significant volatility.

Provisions in our certificate of incorporation and by-laws and under Delaware law may discourage acquisition proposals, delay a change in control or prevent transactions that stockholders may consider favorable.

Provisions in our certificate of incorporation and by-laws may discourage, delay or prevent a merger, acquisition or other changes in control that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions may also prevent or frustrate attempts by our stockholders to replace or remove our management.

These provisions include:

- the classification of our directors;
- limitations on changing the size of our Board of Directors;
- limitations on the removal of directors;
- limitations on filling vacancies on the Board of Directors;
- advance notice requirements for stockholder nominations of candidates for election to the Board of Directors and other proposals;
- the inability of stockholders to act by written consent;
- the inability of stockholders to call special meetings; and
- the ability of our Board of Directors to designate the terms of and issue a new series of preferred stock without stockholder approval.

The affirmative vote of a majority of our Board of Directors or the holders of our capital stock representing at least 75% of the voting power of all outstanding stock entitled to vote is required to amend or repeal the above provisions of our certificate of incorporation or by-laws. The affirmative vote of either a majority of the directors present at a meeting of our Board of Directors or holders of our capital stock representing at least 75% of the voting power of all outstanding stock entitled to vote is required to amend or repeal our by-laws.

In addition, we are subject to Section 203 of the Delaware General Corporation Law (Section 203). In general and subject to certain exceptions, Section 203 prohibits a publicly-held corporation from engaging in a business combination with an interested stockholder, generally a person which, together with its affiliates, owns or within the last three years has owned 15% or more of the corporation's voting stock, for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Accordingly, Section 203 may discourage, delay or prevent a change in control of us.

Our Board of Directors may implement a new stockholder rights plan without stockholder approval, which could prevent a change in control of us in instances in which some stockholders may believe a change in control is in their best interests.

Our Board of Directors may implement a stockholder rights plan without stockholder approval, which may have anti-takeover effects, potentially preventing a change in control of us in instances in which some stockholders may believe a change in control is in their best interests. This could cause substantial dilution to a person or group that attempts to acquire us on terms that our Board of Directors does not believe are in our best interests or those of our stockholders and may discourage, delay or prevent a merger or acquisition that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares.

Our stock price is volatile, and purchasers of our common stock could incur substantial losses.

Our stock price has been, and is likely to continue to be, volatile. The market price of our common stock could fluctuate significantly for many reasons, including in response to the risks described in this “Risk Factors” section, or for reasons unrelated to our operations, such as reports by industry analysts, investor perceptions or negative announcements by our customers, competitors or suppliers regarding their own performance, as well as industry conditions and general financial, economic and political instability. From November 15, 2006, when our common stock first began trading on the New York Stock Exchange, through February 22, 2023, our common stock has traded as high as $137.61 per share and as low as $4.17 per share. The market price of our common stock may be influenced by many factors, including, among others:

- contracts, decisions and procurement policies by the USG affecting our anthrax vaccines and our other products and product candidates;
- CDMO contracts related to COVID-19 with collaboration partners;
- the success of competitive products or technologies;

- results of clinical and non-clinical trials of our product candidates;
- announcements of acquisitions, financings or other transactions by us;
- litigation or legal proceedings;
- public concern as to the safety of our products;
- termination or delay of a development program;
- the recruitment or departure of key personnel;
- variations in our product revenue and profitability; and
- the other factors described in this “Risk Factors” section.

Because we currently do not pay dividends, investors will benefit from an investment in our common stock only if it appreciates in value.

We currently do not pay dividends on our common stock. Our Senior Secured Credit Facilities and the indenture governing our Senior Unsecured Notes limit and any future debt agreements that we enter into may limit our ability to pay dividends. As a result, capital appreciation, if any, of our common stock will be the sole source of gain for our stockholders based on current expectations.

Future issuances of our common stock or securities convertible into common stock could result in dilution of our stockholders and could cause our share price to decline.

We expect to continue to opportunistically seek access to additional capital to license or acquire additional products, product candidates or companies to expand our operations or for general corporate purposes. To the extent we raise additional capital by issuing equity securities or securities convertible or exchangeable into common stock, our stockholders may experience substantial dilution. We may sell common stock, and we may sell convertible or exchangeable securities or other equity securities in one or more transactions at prices and in a manner we determine from time to time. If we sell such common stock, convertible or exchangeable securities or other equity securities in subsequent transactions, existing stockholders may be materially diluted.

GENERAL RISK FACTORS

The accuracy of our financial reporting depends on the effectiveness of our internal control over financial reporting. Any additional material weakness in our internal control over financial reporting could have an adverse effect on our business and financial results and our ability to meet our reporting obligations could be negatively affected, each of which could negatively affect the trading price of our common stock.

Internal control over financial reporting can provide only reasonable assurance with respect to the preparation and fair presentation of financial statements and may not prevent or detect misstatements. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. Failure to maintain effective internal control over financial reporting, or lapses in disclosure controls and procedures, could impact our financial information and disclosures, require significant resources to remediate, and expose us to legal or regulatory proceedings.

We regularly review and update our internal controls and disclosure controls and procedures. In addition, we are required under the Sarbanes-Oxley Act of 2002 to report annually on our internal control over financial reporting.

Our success is dependent on our continued ability to attract, motivate and retain key personnel, and any failure to attract or retain key personnel may negatively affect our business.

Because of the specialized scientific nature of our business, our ability to develop products and to compete with our current and future competitors largely depends upon our ability to attract, retain and motivate highly qualified managerial and key scientific and technical personnel (including quality and manufacturing personnel). If we are unable to retain the services of one or more of the principal members of senior management or other key employees, our ability to implement our business strategy could be materially harmed. We face intense competition for qualified employees from biopharmaceutical companies, research organizations and academic institutions. Attracting, retaining or replacing these personnel on acceptable terms may be difficult and time-consuming given the high demand in our industry for similar personnel. We believe part of being able to attract, motivate and retain personnel is our ability to offer a competitive compensation package, including equity incentive awards. If we cannot offer a competitive compensation package to attract and retain the qualified personnel necessary for the continued development of our business, we may not be able to maintain our operations or grow our business.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

We own and lease approximately 1.6 million square feet of building space for development and manufacturing, laboratories, fill/finish facility services, offices and warehouse space for the conduct of our businesses at 25 locations in North America and Europe. Properties that have been leased expire on various dates between 2023 and 2034. Principal locations include:

Location	Use	Approximate square feet	Owned/leased	Operating Segment
Lansing, Michigan	Manufacturing operations, office and laboratory space.	336,000	Owned	Products & Services
Winnipeg, Manitoba, Canada	Manufacturing operations, office and laboratory space.	315,000 (Owned); 15,800 (Leased)	Owned/Leased	Products & Services
Gaithersburg, Maryland	Laboratory space, office space and rental real estate.	173,000	Owned	Products & Services
Canton, Massachusetts	Manufacturing operations and warehouse space.	122,508 (Owned); 27,000 (Leased)	Owned/Leased	Products & Services
Baltimore, Maryland (Bayview)	Manufacturing facilities, office and laboratory space.	112,000	Owned	Products & Services
Elkridge, Maryland	Warehouse space.	103,182	Leased	Products & Services
Baltimore, Maryland (Camden)	Manufacturing facilities, office and laboratory space.	86,900 (Owned); 41,000 (Leased)	Owned/Leased	Products & Services
Rockville, Maryland	Manufacturing facilities, office and warehouse space.	84,295	Owned	Products & Services
Bern, Switzerland	Manufacturing operations, office and laboratory space.	81,000	Owned	Products
San Diego, California	Manufacturing facilities and office space.	66,012	Leased	Products

Each property is considered to be in good condition, adequate for its purpose, and suitably utilized according to the individual nature and requirements of the relevant operations. Our policy is to improve and replace property as considered appropriate to meet the needs of the individual operations.

ITEM 3. LEGAL PROCEEDINGS

See Item 8 of Part II, “Financial Statements and Supplemental Data — Notes to consolidated financial statements" — Note 17 ”Litigation."

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information and Holders

Our common stock trades on the New York Stock Exchange under the symbol "EBS".

As of February 22, 2023, the closing price per share of our common stock on the New York Stock Exchange was $13.98 and we had 18 holders of record of our common stock. This number does not include beneficial owners whose shares are held by nominees in street name.

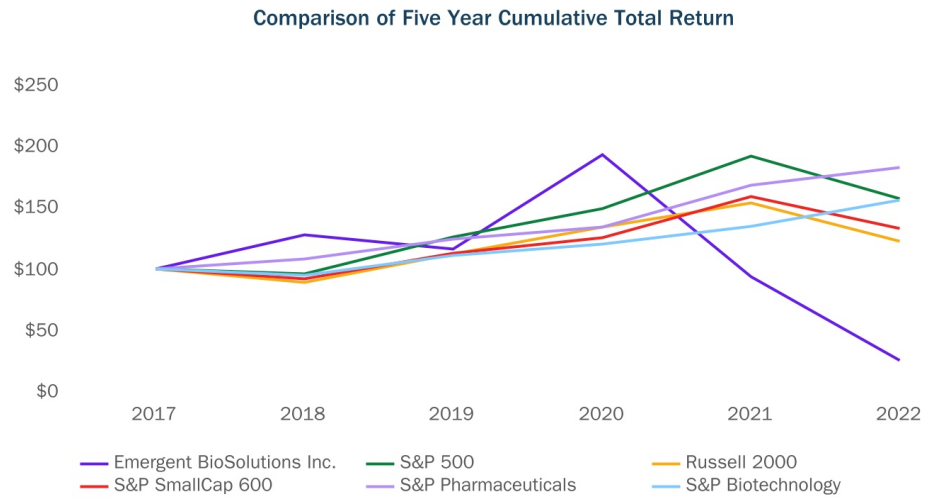
Dividend Policy

We have not declared or paid any cash dividends on our common stock since becoming a publicly traded company in November 2006. We currently have no plans to pay dividends.

The remaining information required by Item 5 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 Annual Meeting of the Stockholders, to be filed with the SEC within 120 days following the end of our fiscal year.

Stock Performance Graph

The following graph provides a comparison of five year cumulative total stockholder returns of Emergent BioSolutions Inc.'s common stock, the Standard & Poor's ("S&P") 500 Stock Index, the Russell 2000 Index, the S&P SmallCap 600 Index, the S&P Pharmaceuticals Index and the S&P Biotechnology Index. The annual changes for the five-year period shown on the graph are based on the assumptions that $100 had been invested in Emergent BioSolutions Inc.'s common stock and each index on December 31, 2017, all fiscal years end December 31st and all dividends were reinvested.



	Market Performance					
Company / Index	2017	2018	2019	2020	2021	2022
Emergent BioSolutions Inc.	$ 100.00	$ 127.57	$ 116.10	$ 192.81	$ 93.54	$ 25.41
S&P 500	$ 100.00	$ 95.62	$ 125.72	$ 148.85	$ 191.58	$ 156.89
Russell 2000	$ 100.00	$ 88.99	$ 111.70	$ 134.00	$ 153.85	$ 122.41
S&P SmallCap 600	$ 100.00	$ 91.52	$ 112.37	$ 125.05	$ 158.59	$ 133.06
S&P Pharmaceuticals	$ 100.00	$ 108.09	$ 124.40	$ 133.76	$ 168.21	$ 182.43
S&P Biotechnology	$ 100.00	$ 94.50	$ 110.67	$ 120.22	$ 134.80	$ 155.89

ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion and analysis is meant to provide material information relevant to an assessment of the financial condition and results of operations of our company, including an evaluation of the amounts and uncertainties of cash flows from operations and from outside resources, so as to allow investors to better view our company from management's perspective. You should read the following discussion and analysis of our financial condition and results of operations together with our financial statements and the related notes and other financial information included elsewhere in this Annual Report on Form 10-K. Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business and financing, includes forward-looking statements that involve risks and uncertainties. You should carefully review the "Cautionary Note Regarding Forward-Looking Statements" and "Risk Factors" sections of this Annual Report on Form 10-K for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis.

BUSINESS OVERVIEW

Emergent BioSolutions Inc. (“Emergent,” the “Company,” “we,” “us,” and “our”) is a global life sciences company focused on providing innovative preparedness and response solutions addressing accidental, deliberate, and naturally occurring Public Health Threats ("PHTs"). The Company's solutions include a product portfolio, a product development portfolio, and a contract development and manufacturing ("CDMO") services portfolio.

We are currently focused on the following five PHT categories: chemical, biological, radiological, nuclear and explosives ("CBRNE"); emerging infectious diseases ("EID"); travel health, which we have agreed to sell to Barvarian Nordic; public health crises; and acute, emergency and community care. We have a product portfolio of thirteen products that contribute a substantial portion of our revenue and are sold to government and commercial customers. We also have a product candidate, AV7909, which is procured under special circumstances by the United States ("U.S.") Government ("USG"), although it is not approved by the U.S. Food and Drug Administration ("FDA"). Additionally, we have a development pipeline consisting of a diversified mix of both pre-clinical and clinical stage product candidates. Finally, we have a fully integrated portfolio of CDMO services. Our CDMO service offerings cover development services, drug substance manufacturing and drug product manufacturing and packaging.

The Company structures the business with a focus on markets and customers. As such, the key components of the business structure include the following three product and service categories: Government - Medical Countermeasures ("MCM") Products, Commercial Products, and CDMO Services. The Company operates as two operating segments: (1) a products segment ("Products") consisting of the Government - MCM and Commercial products and (2) a services segment ("Services") consisting of our CDMO services.

Products Segment:

The majority of our product revenue comes from the following products and procured product candidates:

Government - MCM Products

- ACAM2000®, (Smallpox (Vaccinia) Vaccine, Live), the only single-dose smallpox vaccine licensed by the FDA for active immunization against smallpox disease for persons determined to be at high risk for smallpox infection;
- Anthrasil® (Anthrax Immune Globulin Intravenous (human)), the only polyclonal antibody therapeutic licensed by the FDA and Health Canada for the treatment of inhalational anthrax in combination with appropriate antibacterial drugs;
- Anthrax vaccines, including our AV7909 (Anthrax vaccine adsorbed (AVA), adjuvanted) procured product candidate being developed as a next-generation anthrax vaccine for post-exposure prophylaxis and BioThrax® (Anthrax Vaccine Adsorbed), the only vaccine licensed by the FDA for the general use prophylaxis and post-exposure prophylaxis of anthrax disease. AV7909 has not been approved by the FDA, but is procured by certain authorized government buyers for their use;
- BAT® (Botulism Antitoxin Heptavalent (A,B,C,D,E,F,G)-(Equine)), the only heptavalent antitoxin licensed by the FDA and Health Canada for the treatment of symptomatic botulism;
- CNJ-016® (Vaccinia Immune Globulin Intravenous (Human) (VIGIV)), the only polyclonal antibody therapeutic licensed by the FDA and Health Canada to address certain complications from smallpox vaccination;

- Ebanga™ (ansuvimab-zykl) is a monoclonal antibody with antiviral activity provided through a single IV infusion for the treatment of Ebola. Under the terms of a collaboration with Ridgeback Biotherapeutics ("Ridgeback"). Emergent will be responsible for the manufacturing, sale, and distribution of Ebanga™ in the U.S. and Canada, and Ridgeback will serve as the global access partner for Ebanga™;
- Raxibacumab injection, the first fully human monoclonal antibody therapeutic licensed by the FDA for the treatment and prophylaxis of inhalational anthrax;
- RSDL® (Reactive Skin Decontamination Lotion Kit), the only medical device cleared by the FDA that is intended to remove or neutralize chemical warfare agents from the skin, including: tabun, sarin, soman, cyclohexyl sarin, VR, VX, mustard gas and T-2 toxin;
- TEMBEXA®, an oral antiviral formulated as 100 mg tablets and 10 mg/mL oral suspension dosed once weekly for two weeks which has been approved by the FDA for the treatment of smallpox disease caused by variola virus in adult and pediatric patients, including neonates; and
- Trobigard® atropine sulfate, obidoxime chloride auto-injector, a combination drug-device auto-injector procured product candidate that contains atropine sulfate and obidoxime chloride. It was approved in Belgium in 2021 but has not been approved by the FDA. Trobigard is procured by certain authorized government buyers under special circumstances for potential use as a nerve agent countermeasure outside of the U.S.

Commercial Products

- NARCAN® (naloxone HCl) Nasal Spray, an intranasal formulation of naloxone approved by the FDA and Health Canada for the emergency treatment of known or suspected opioid overdose as manifested by respiratory and/or central nervous system depression;
- Vaxchora® (Cholera Vaccine, Live, Oral), the first vaccine approved by the FDA for the prevention of cholera, which we have agreed to sell as part of our travel health business; and
- Vivotif® (Typhoid Vaccine Live Oral Ty21a), a live attenuated vaccine for oral administration for the prevention of typhoid fever, which we have agreed to sell as part of our travel health business.

Services Segment:

Services - Contract Development and Manufacturing

Our services revenue consists of distinct but interrelated CDMO services: drug substance manufacturing; drug product manufacturing (also referred to as "fill/finish" services) and packaging; development services including technology transfer, process and analytical development services; and, when necessary, suite reservation obligations. These services, which we refer to as "molecule-to-market" offerings, employ diverse technology platforms (mammalian, microbial, viral and plasma) across a network of nine geographically distinct development and manufacturing sites operated by us for our internal products and pipeline candidates and third-party CDMO services. We service both clinical-stage and commercial-stage projects for a variety of third-party customers, including government agencies, innovative pharmaceutical companies, and non-government organizations.

Full Year 2022 Executive Highlights

Asset Acquisition

During the year ended December 31, 2022, the Company acquired from Chimerix the exclusive worldwide rights to brincidofovir, including TEMBEXA® and other related assets. TEMBEXA is a medical countermeasure for smallpox approved by the FDA in June 2021.

Other Strategic Activities

2023 Organizational Restructuring Plan

On January 9, 2023, the Company announced an organizational restructuring plan (the “Plan”) intended to reduce operating costs, improve operating margins, and continue advancing the Company’s ongoing commitment to profitable growth. The Plan includes a reduction of the Company’s current workforce by approximately five percent. Decisions regarding the elimination of positions are subject to local law and consultation requirements in certain countries, as well as the Company’s business needs.

The Company estimates that it will incur approximately $9.0 million to $11.0 million of charges in connection with the Plan, which it expects to incur in the first quarter of fiscal 2023. These charges consist primarily of charges related to

employee transition, severance payments, employee benefits, and share-based compensation. These actions, in combination with other cost reduction initiatives, are expected to result in annualized savings of over $60 million when fully implemented.

Agreement to Sell Travel Business

On February 15, 2023, we entered into the Sale Agreement with Bavarian Nordic, under which we agreed to sell our travel health business, including rights to Vaxchora and Vivotif, as well as our development-stage chikungunya vaccine candidate CHIKV VLP, our manufacturing site in Bern, Switzerland and certain of our development facilities in San Diego, California for a cash purchase price of $270.0 million, subject to certain customary adjustments. In addition, we may receive milestone payments of up to $80.0 million related to the development of CHIKV VLP and receipt of marketing approval and authorization in the U.S. and Europe, and sales-based milestones payments of up to $30.0 million based on aggregate net sales of Vaxchora and Vivotif in calendar year 2026. Approximately 280 employees are expected to join Bavarian Nordic as part of the transaction.

The transaction is expected to close in the second quarter of 2023, subject to certain customary closing conditions, including (1) the expiration or earlier termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, (2) receipt of required clearances and approvals under Spain's competition laws, (3) receipt of certain Swiss real property approvals, (4) no material adverse effect having occurred with respect to the Business, and (5) certain other customary conditions.

Financial Operations Overview

Revenues

We generate product revenues from the sale of our marketed products and procured product candidates. The USG is the largest purchaser of our Government - MCM products and primarily purchases our products for the SNS, a national repository of medical countermeasures including critical antibiotics, vaccines, chemical antidotes, antitoxins, and other critical medical supplies. The USG primarily purchases our products under long-term, firm fixed-price procurement contracts, generally with annual options. Our opioid overdose treatment product, NARCAN® Nasal Spray, and our travel health products, Vivotif and Vaxchora, are sold commercially through wholesalers and distributors, physician-directed or standing order prescriptions at retail pharmacies and to state and local community healthcare agencies, practitioners and hospitals.

We also generate revenue from our CDMO services, which is based on our established development and manufacturing infrastructure, technology platforms and expertise. Our services include a fully integrated molecule-to-market CDMO services business offering across development services, drug substance and drug product for small to large pharmaceutical and biotechnology industry and government agencies/non-governmental organizations. From time to time, clients require suite reservations at our various manufacturing sites, which may be considered leases depending on the facts and circumstances.

We have received contracts and grant funding from the USG and other non-governmental organizations to perform R&D activities, particularly related to programs addressing certain CBRNE threats and EIDs.

Our revenue, operating results and profitability vary quarterly based on the timing of production and deliveries, the timing of manufacturing services performed and the nature of our business, which involves providing large scale bundles of products and services as needs arise. We expect continued variability in our quarterly financial results.

Cost of Product Sales and Services

Products - The primary expenses that we incur to deliver our products consist of fixed and variable costs. We determine the cost of product sales for products sold during a reporting period based on the average manufacturing cost per unit in the period those units were manufactured. Fixed manufacturing costs include facilities, utilities and amortization of intangible assets. Variable manufacturing costs primarily consist of costs for materials and personnel-related expenses for direct and indirect manufacturing support staff, contract manufacturing operations, sales-based royalties, shipping and logistics. In addition to the fixed and variable manufacturing costs described above, the cost of product sales depends on utilization of available manufacturing capacity. For our commercial sales, other associated expenses include sales-based royalties (which include fair value adjustments associated with contingent consideration), shipping, and logistics.

Services - The primary expenses that we incur to deliver our CDMO services consist of fixed and variable costs, including personnel, equipment, and facilities costs. Our manufacturing process includes the production of bulk material

and performing drug product work for containment and distribution of biological products. For drug product customers, we receive work in process inventory to be prepared for distribution.

Research and Development Expenses ("R&D")

We expense R&D costs as incurred. Our R&D expenses consist primarily of:

- personnel-related expenses;
- fees to professional service providers for, among other things, analytical testing, independent monitoring or other administration of our clinical trials and obtaining and evaluating data from our clinical trials and non-clinical studies;
- costs of CDMO services for our clinical trial material; and
- costs of materials intended for use and used in clinical trials and R&D.

In many cases, we seek funding for development activities from external sources and third parties, such as governments and non-governmental organizations, or through collaborative partnerships. We expect our R&D spending will be dependent upon such factors as the results from our clinical trials, the availability of reimbursement of R&D spending, the number of product candidates under development, the size, structure and duration of any clinical programs that we may initiate, the costs associated with manufacturing and development of our product candidates on a large-scale basis for later stage clinical trials, and our ability to use or rely on data generated by government agencies.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of personnel-related costs and professional fees in support of our executives, sales and marketing, business development, government affairs, finance, accounting, information technology, legal, human resource functions and other corporate functions. Other costs include facility costs not otherwise included in cost of product sales and CDMO services or R&D expense.

Income Taxes

Uncertainty in income taxes is accounted for using a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. We recognize in our financial statements the impact of a tax position if that position is more likely than not of being sustained on audit, based on the technical merits of the position.

Management believes that the assumptions and estimates related to the provision for income taxes are critical to the Company's results of operations. For the year ended December 31, 2022, income tax expense totaled $2.1 million. For every 1% change in the 2022 effective rate, income tax expense would have changed by approximately $2.2 million.

For additional information on our uncertain tax positions and income tax expense, please see Note 13, "Income taxes" to our consolidated financial statements included in this report.

RESULTS OF OPERATIONS

Consolidated and Segment Operating Results:

(in millions)	Year ended December 31, 2022	2021	$ Change	% Change
Revenues:				
Product sales, net:				
Nasal Naloxone Products	$ 373.7	$ 434.3	$ (60.6)	(14)%
Anthrax Vaccines	274.3	259.8	14.5	6 %
ACAM2000	63.4	206.5	(143.1)	(69)%
TEMBEXA	117.6	—	—	NM
Other product sales	137.2	123.3	13.9	11 %
Total product sales, net	966.2	1,023.9	(57.7)	(6)%
Services:				
CDMO - Services	108.4	334.9	(226.5)	(68)%
CDMO - Leases	4.9	299.7	(294.8)	(98)%
Total services revenues	113.3	634.6	(521.3)	(82)%
Contracts and grants	41.4	134.2	(92.8)	(69)%
Total revenues	1,120.9	1,792.7	(671.8)	(37)%
Operating expenses:				
Cost of product sales	424.1	382.0	42.1	11 %
Cost of services	269.6	375.5	(105.9)	(28)%
Research and development	193.0	234.0	(41.0)	(18)%
Selling, general and administrative	340.3	348.4	(8.1)	(2)%
Goodwill impairment	6.7	41.7	(35.0)	(84)%
Amortization of intangible assets	59.9	58.5	1.4	2 %
Total operating expenses	1,293.6	1,440.1	(146.5)	(10)%
Income (loss) from operations	(172.7)	352.6	(525.3)	NM
Other income (expense):				
Interest expense	(37.3)	(34.5)	(2.8)	8 %
Other, net	(11.7)	(3.7)	(8.0)	NM
Total other income (expense), net	(49.0)	(38.2)	(10.8)	28 %
Income (loss) before income taxes	(221.7)	314.4	(536.1)	NM
Income tax provision	2.1	83.5	(81.4)	(97)%
Net income (loss)	$ (223.8)	$ 230.9	$ (454.7)	NM

NM - Not meaningful

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

Revenues and gross margin

Total revenues decreased $671.8 million to $1.1 billion in 2022. The decrease was primarily due to a decrease in Services revenue of $521.3 million, coupled with decreases in Contracts and Grants revenue of $92.8 million and Products revenue of $57.7 million.

Consolidated gross margin percentage decreased 19% to 36%. The decrease was primarily due to decreases in the Services segment and Products segment gross margins of $415.4 million and $99.8 million, respectively. Consolidated gross margin percentage excludes contracts and grants revenues because the related costs are R&D expenses.

See "Segment Results" for an expanded discussion of revenues and gross profit.

Unallocated corporate expenses

Research and Development Expenses

R&D expenses decreased $41.0 million to $193.0 million in 2022. The decrease was largely due to the non-cash write-off in 2021 of $38.0 million of the contract asset associated with the completion of the BARDA COVID-19 Development Public Private Partnership, coupled with a decrease in spending for the Company's COVID-19 therapeutic product candidates along with a number of other developmental activities, partially offset by an increase in costs associated with the Company's Phase 3 study of our chikungunya virus-like particle vaccine candidate and pre-launch inventory related to CGRD-001.

Selling, General and Administrative Expenses

Selling, general and administrative expenses decreased $8.1 million to $340.3 million in 2022. The decrease was due to lower professional services and marketing expenses partially offset by increased employee costs, primarily due to increased travel costs. Selling, general and administrative costs as a percentage of total revenue increased 10.9% to 30.4% for the year ended December 31, 2022. The increase was due to a decrease in revenues during the period, partially offset by a decrease in selling, general and administrative expenses during the period.

Amortization of Intangible Assets

Amortization of intangible assets increased $1.4 million to $59.9 million in 2022. Apart from the addition of the intangibles related to the Company's acquisition of the worldwide rights to TEMBEXA in 2022, the composition of intangible assets amortized was largely consistent with 2021.

Goodwill Impairment

Goodwill impairment decreased $35.0 million to $6.7 million in 2022. The decrease was due to a smaller non-cash impairment charge taken in 2022 as compared with 2021. In 2022, as part of its annual goodwill impairment testing, the Company recognized a $6.7 million impairment charge to goodwill in the CDMO- Services reporting unit, reducing the goodwill balance to zero as of December 31, 2022.

There is the risk of future impairments in our reporting units as any further deterioration in their performance compared to forecast, changes in order volumes or delivery schedules for major customers, as well as any changes in economic forecasts and expected recovery in the biopharmaceutical industry, may require the Company to complete additional impairment tests in future quarters and could result in the reporting unit’s fair value falling below carrying value in subsequent quarters. In the event the Company experiences factors that it believes indicate a decline in fair value, including negative changes to long-term growth rates or if discount rates increase, we may be required to record impairments of goodwill and other identified intangible assets. Further, if the composition of the Company’s reporting unit’s assets and liabilities were to change and result in an increase in the reporting unit’s carrying value, it could lead to additional impairment testing and further impairment losses.

Total other income (expense), net

Total other income (expense), net decreased $10.8 million to an expense of $49.0 million in 2022. The decrease was due to a write-off of a tax indemnity receivable, which is offset in income tax provision, and unrealized foreign currency losses recorded related to the remeasurement of certain intercompany balances. Interest expense was largely consistent between periods.

Income tax provision

Income tax provision decreased $81.4 million to $2.1 million for the year ended December 31, 2022. The decrease was largely due to the decline in income before income taxes. The effective tax rate was (1)% for the year ended December 31, 2022 as compared to 27% in 2021. The effective annual tax rate decreased largely due to an increase in nondeductible expenses, specifically the impact of a valuation allowance charge in the U.S., state and foreign jurisdictions, a charge due the Company's indefinite reinvestment assertion, GILTI, and other permanent items. This is partially offset by tax credits, favorable rates in foreign jurisdictions, and the release of an indemnified unrecognized tax benefit.

SEGMENT RESULTS

PRODUCTS SEGMENT

	Products Segment		
	Year Ended December 31,		
(in millions)	2022	2021	% Change
Revenues	$ 966.2	$ 1,023.9	(6)%
Cost of sales	$ 424.1	$ 382.0	11 %
Less: Changes in fair value of contingent consideration	2.6	2.9	(10)%
Less: Inventory step-up provision	51.4	—	NM
Adjusted cost of sales [1]	$ 370.1	$ 379.1	(2)%
Gross margin [2]	$ 542.1	$ 641.9	(16)%
Gross margin % [2]	56 %	63 %	(11)%
Adjusted gross margin [3]	$ 596.1	$ 644.8	(8)%
Adjusted gross margin % [3]	62 %	63 %	(2)%

[1] Adjusted cost of sales, which is a non-GAAP financial measure, is calculated as cost of sales less changes in fair value of contingent consideration and inventory step-up provision, both of which are non-cash items.

[2] Gross margin is calculated as revenues less cost of sales. Gross margin % is calculated as gross margin divided by revenues.

[3] Adjusted gross margin, which is a non-GAAP financial measure, is calculated as revenues less Adjusted cost of sales. Adjusted gross margin %, which is a non-GAAP financial measure, is calculated as Adjusted gross margin divided by revenues.

NM - Not meaningful

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

Nasal Naloxone Products

Nasal Naloxone Product sales decreased $60.6 million to $373.7 million in 2022. The decrease was primarily driven by a reduction in commercial retail sales and a decrease in the price per unit following the launch of a generic version of NARCAN Nasal Spray 4mg in December 2021, partially offset by an increase in U.S. public interest and Canadian sales.

Anthrax Vaccines

Anthrax vaccine sales increased $14.5 million to $274.3 million in 2022. The increase in anthrax vaccine sales was primarily due to an increase in the number of doses sold as a result of the timing of deliveries to the USG in 2022 as compared with 2021, as well as an increase in sales to non-USG customers at a higher price per unit in 2022. Anthrax vaccine product sales are primarily made under annual purchase options exercised by the USG. Fluctuations in revenues result from the timing of the exercise of annual purchase options and the USG purchases and Company delivery of orders that follow.

ACAM2000

ACAM2000 sales decreased $143.1 million to $63.4 million in 2022. The decrease was primarily due to a lower number of units sold to the USG, partially offset by an increased number of units sold to non-U.S. customers at a higher price per unit. We are currently negotiating with HHS the terms of a third contract option for ACAM2000. The actual number of ACAM2000 doses to be procured in the future is dependent on certain timing and tiered-pricing terms that are subject to the discretion of HHS.

TEMBEXA

TEMBEXA sales, following the 2022 acquisition of worldwide rights to TEMBEXA, contributed $117.6 million in revenues in 2022.

Other Product Sales

Other product sales increased $13.9 million to $137.2 million in 2022. The increase was primarily due to increased sales of Anthrasil, Vivotif and RSDL products partially offset by decreased sales of VIGIV and BAT products.

Cost of Sales and Gross Margin

Cost of product sales increased $42.1 million, or 11%, to $424.1 million in 2022. The increase was primarily due to cost of sales for TEMBEXA following our 2022 acquisition of the worldwide rights for TEMBEXA. Excluding the acquisition related product costs, cost of product sales decreased $18.1 million, primarily due decreases in royalties paid for NARCAN sales and ACAM2000 product sales which were due to a reduced number of units sold to the USG and decreased expenses at our Bern facility due to higher facility utilization versus prior year. These were partially offset by inventory write-offs, primarily related to AV7909 and ACAM2000 and higher costs due to under-utilized capacity at our facilities.

Product gross margin percentage decreased 7% to 56% in 2022. The decrease was largely due to decreased sales volumes and inventory write-offs combined with a less favorable mix weighted more heavily to lower margin products. Adjusted gross margin percentage decreased 1% to 62% in 2022. Adjusted gross margin excludes the impact of non-cash items related to the changes in the fair value of contingent consideration of $2.6 million and the inventory step-up provision TEMBEXA inventory of $51.4 million.

SERVICES SEGMENT

	Services Segment		
	Year Ended December 31,		
(in millions)	2022	2021	% Change
Revenues	$ 113.3	$ 634.6	(82)%
Cost of sales	$ 269.6	$ 375.5	(28)%
Gross margin [1]	$ (156.3)	$ 259.1	NM
Gross margin % [1]	(138)%	41 %	NM

[1] Gross margin is calculated as revenues less cost of sales. Gross margin % is calculated as gross margin divided by revenues.
NM - Not meaningful

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

Services Revenues

CDMO services revenue decreased $226.5 million to $108.4 million in 2022. The decrease was primarily due to $201.4 million less of combined revenue related to reduced production activities at the Company's Bayview facility as a result of a halt in manufacturing under the Janssen contract in first quarter of 2022 and the cessation of manufacturing activities under the AstraZeneca contract which occurred in 2021. Additionally, the decrease also reflects reduced production at the Camden facility. The decreases were slightly offset by an increase in manufacturing activities at the Company's Winnipeg facility.

CDMO lease revenue decreased $294.8 million to $4.9 million in 2022. The decrease was primarily due to a reduction of $237.6 million associated with the completion of our COVID-19 development public-private partnership with BARDA in November 2021 and reduced lease revenues under the Janssen contract of $58.1 million.

Cost of Services and Gross Margin

Cost of Services decreased $105.9 million, or 28%, to $269.6 million in 2022. The decrease was primarily due to reduced production activities across our CDMO network, as well as a $41.5 million inventory write-off related to the Bayview facility in the second quarter of 2021, partially offset by increased costs at our Camden facility for additional investments in quality enhancement and improvement initiatives.

Services gross margin percentage decreased to (138)% in 2022. The decrease was primarily due to reduced production activities across our CDMO network including the completion of the Company's arrangement with BARDA in November 2021, the halt in manufacturing under the Janssen and AstraZeneca contracts and the decrease in margins at the Company's Camden facility due to additional investments in quality enhancement and improvement initiatives, including an increase in professional services costs.

OTHER REVENUE

Year Ended December 31, 2022 Compared with Year Ended December 31, 2021

Contracts and Grants

Contract and grants revenue decreased $92.8 million, or 69%, to $41.4 million in 2022. The decrease was primarily due to BARDA's completion of the CIADM agreement in November 2021 as well as decreases in development activities associated with various other externally funded research and development projects, most notably the Company's COVID-HIG therapeutic product candidate, as well as decreases in development activities for AV7909. Decreases were partially offset by revenue increases relating to indirect rate adjustments during the period.

Year Ended December 31, 2021 Compared with Year Ended December 31, 2020

Discussion and analysis of the year ended December 31, 2021 compared with the year ended December 31, 2020 is included under the heading "Item 7 Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2021, as filed with the SEC on February 25, 2022.

Financial Condition, Liquidity and Capital Resources

Our financial condition is summarized as follows:

(in millions, except percentages)	December 31, 2022	2021	Change %
Financial assets:			
Cash and cash equivalents	$ 642.6	$ 576.1	12 %
Borrowings:			
Debt, current portion	$ 957.3	$ 31.6	NM
Debt, net of current portion	448.5	809.4	(45)%
Total borrowings	$ 1,405.8	$ 841.0	67 %
Working capital:			
Current assets	$ 1,210.7	$ 1,272.1	(5)%
Current liabilities	1,229.9	373.8	229 %
Total working capital	$ (19.2)	$ 898.3	(102)%

NM - Not Meaningful

Principal Sources of Capital Resources

We have historically financed our operating and capital expenditures through existing cash and cash equivalents, cash from operations, development contracts and grant funding and borrowings under our senior revolving credit facility (the "Revolving Credit Facility") and senior term loan facility (the "Term Loan Facility", and together with the Revolving Credit Facility, the "Senior Secured Credit Facilities") and other lines of credit we have established from time to time. We also obtain financing from the sale of our common stock upon exercise of stock options. As of December 31, 2022, we had unrestricted cash and cash equivalents of $642.6 million and remaining capacity under our Revolving Credit Facility of $0.7 million.

Going Concern

The consolidated financial statements have been prepared on the going concern basis of accounting, which assumes the Company will continue to operate as a going concern and which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of business.

As of December 31, 2022, there is $598.0 million outstanding on the our Revolving Credit Facility and $362.8 million on our Term Loan Facility that mature in October 2023, which is within one year of the date that the consolidated financial statements for the year ended December 31, 2022 are issued. The Company determined that there is substantial doubt about the Company’s ability to continue as a going concern within one year after the date that the financial statements are issued as a result of these pending maturities. This evaluation considered the potential mitigating effect of management’s plans that have not been fully implemented. Management may evaluate the mitigating effect of its plans to determine if it is probable that (1) the plans will be effectively implemented within one year after the date the financial statements are issued, and (2) when implemented, the plans will mitigate the relevant conditions or events that raise substantial doubt about the entity’s ability to continue as a going concern. The Company's plan to alleviate the substantial doubt includes amending its existing Senior Secured Credit Facilities that are due October 2023.

On February 14, 2023, the Company entered into a Consent, Limited Waiver, and Third Amendment to the Amended and Restated Credit Agreement (the "Credit Agreement" and “Third Credit Agreement Amendment”) relating to the Senior Secured Credit Facilities. Pursuant to the Third Credit Agreement Amendment, the requisite lenders consented to our sale of our travel health business to Bavarian Nordic substantially in accordance with the terms of the Sale Agreement. The proceeds from the transaction will be deposited into a cash collateral account with the Administrative Agent and will, unless otherwise agreed to by the Company and the requisite lenders, be used to repay the outstanding Term Loan Facility on the expiration of the Limited Waiver (as described below). We currently expect the transaction to close in the second quarter of 2023, but we can provide no assurance that the transaction will close prior to the October 2023 maturity of the Term Loan Facility, or at all.

Pursuant to the Third Credit Agreement Amendment the requisite lenders have agreed to a limited waiver of any defaults or events of default that result from (a) any violation of the financial covenants set forth in the Senior Secured Credit Facilities with respect to the fiscal quarters ending December 31, 2022 and March 31, 2023 and (b) the going concern qualification or exception contained in the audited financial statements for the fiscal year ending December 31, 2022. This limited waiver will expire on the earlier to occur of (i) any other event of default and (ii) April 17, 2023. During this period the Company is working with lenders under the Senior Secured Credit Facilities in connection with replacing such facilities before their October 2023 maturity with revised terms and conditions. The Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to the Credit Agreement.

While the Company is in the process of replacing and expects to replace the Senior Secured Credit Facilities before they mature, management cannot make the assumption that it is probable that the Company will be able to obtain such debt refinancing on commercially reasonable terms or at all until a new credit facility is in place. The Company is currently working with its lenders to refinance the Senior Secured Credit Facilities with revised terms and conditions. The extent to which the Company will be able to affect such refinancing, replacement or maturity extension on terms that are favorable or at all is dependent on a number of uncertain factors, including then-prevailing credit and other market conditions, economic conditions, particularly in the pharmaceutical and biotechnology industry, disruptions or volatility caused by factors such as COVID-19, regional conflicts, inflation, and supply chain disruptions. In addition, rising interest rates could limit our ability to refinance the Senior Secured Credit Facilities when they mature or cause us to pay higher interest rates upon refinancing.

The Company has $642.6 million of cash on hand at December 31, 2022. On January 9, 2023, the Company announced the 2023 organizational restructuring Plan (the “Plan”) intended to reduce operating costs, improve operating margins, and continue advancing the Company’s ongoing commitment to profitable growth. The Plan includes a reduction of the Company’s current workforce by approximately five percent. These actions, in combination with other cost reduction initiatives, are expected to result in annualized savings of over $60.0 million when fully implemented.

Cash Flows

The following table provides information regarding our cash flows for the years ended December 31, 2022 and 2021.

(in millions)	Year Ended December 31, 2022	2021
Net cash provided by (used in):		
Operating activities	$ (34.1)	$ 321.1
Investing activities	(381.3)	(225.0)
Financing activities	481.2	(141.0)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	0.5	(0.3)
Net change in cash, cash equivalents and restricted cash	$ 66.3	$ (45.2)

Operating Activities:

Net cash used in operating activities of $34.1 million in 2022 was due to net income excluding non-cash items of $34.6 million offset by positive working capital changes of $0.5 million primarily due an increase in payments for our contingent consideration and other accrued expenses, an increase in prepaid expenses and an accumulation of inventory, partially offset by collections on receivables.

Net cash provided by operating activities of $321.1 million in 2021 was due to net income excluding non-cash items of $477.5 million offset by negative working capital changes of $156.4 million due to increases in receivables and associated changes in contract liabilities and the accumulation of inventory.

Net cash provided by (used in) operating activities decreased $355.2 million from 2021 to 2022. The decrease is due to a decrease in net income excluding non-cash items of $512.1 million offset by an increase in working capital changes of $156.9 million.

Investing Activities:

Net cash used in investing activities of $381.3 million in 2022 relates to payments for asset acquisitions, the purchases of property, plant and equipment and a royalty settlement payment.

Net cash used in investing activities of $225.0 million in 2021 relates to purchases of property, plant and equipment for increased capacity at our Rockville and Bayview facilities.

Net cash used in investing activities increased $156.3 million from 2021 to 2022. The increase is largely due the acquisition of worldwide rights to TEMBEXA® for $238.0 million, which closed in the third quarter of 2022.

Financing Activities:

Net cash provided by financing activities of $481.2 million in 2022 was largely from the $598.0 million of proceeds from our Revolving Credit Facility partially offset by repurchases of stock of $82.1 million and payments on our term loan of $33.8 million.

Net cash used in financing activities of $141.0 million in 2021 was primarily due to repurchases of stock of $106.0 million and payments on debt of $35.9 million.

Net cash provided by (used in) financing activities increased $622.2 million from 2021 to 2022. The increase is largely due to the proceeds from our Revolving Credit Facility of $598.0 million, partially offset by a decrease in cash payments on our Term Loan Facility.

Debt

As of December 31, 2022, the Company has $1.4 billion of fixed and variable rate debt with varying maturities, with $957.3 million payable within 12 months (see Note 8, "Debt" in the Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K).

Uncertainties and Trends Affecting Funding Requirements

We expect to continue to fund our anticipated operating expenses, capital expenditures and debt service requirements from the following sources:

- existing cash and cash equivalents;
- net proceeds from the sale of our products and CDMO services;
- development contracts and grant funding;
- proceeds from the sale of our travel health business to Bavarian Nordic (see Note 18, "Subsequent events" in the Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K); and
- our Senior Secured Credit Facilities and any replacement or other lines of credit we may establish from time to time.

There are numerous risks and uncertainties associated with product sales and with the development and commercialization of our product candidates. We may seek additional external financing to provide additional financial flexibility. Our future capital requirements will depend on many factors, including (but not limited to):

- the level, timing and cost of product sales and CDMO services;
- the extent to which we acquire or invest in and integrate companies, businesses, products or technologies;
- the acquisition of new facilities and capital improvements to new or existing facilities;
- the payment obligations under our indebtedness;
- the scope, progress, results and costs of our development activities;
- our ability to obtain funding from collaborative partners, government entities and non-governmental organizations for our development programs; and
- the costs of commercialization activities, including product marketing, sales and distribution.

If our capital resources are insufficient to meet our future capital requirements, we will need to finance our cash needs through public or private equity or debt offerings, bank loans, collaboration and licensing arrangements, cost reductions, assets sales or a combination of these options.

If we raise funds by issuing equity securities, our stockholders may experience dilution. Public or bank debt financing, if available, may involve agreements that include covenants, like those contained in our 3.875% Senior Unsecured Notes due 2028 (the "Senior Unsecured Notes") and the Senior Secured Credit Facilities, which could limit or restrict our ability to take specific actions, such as incurring additional debt, making capital expenditures, pursuing acquisition opportunities, buying back shares or declaring dividends. If we raise funds through collaboration and licensing arrangements with third parties, it may be necessary to relinquish valuable rights to our technologies or product candidates or grant licenses on terms that may not be favorable to us.

Economic conditions, including market volatility and adverse impacts on financial markets as a result of the COVID-19 pandemic, may make it more difficult to obtain financing on attractive terms, or at all. Any new debt funding, if available, may be on terms less favorable to us than our Senior Secured Credit Facilities or the Senior Unsecured Notes. If financing is unavailable or lost, our business, operating results, financial condition and cash flows would be adversely affected, and we could be forced to delay, reduce the scope of or eliminate many of our planned activities.

Unused Credit Capacity

Available room under the Revolving Credit Facility as of December 31, 2022 and December 31, 2021 was:

(in millions)	December 31, 2022	December 31, 2021
Total Capacity	$ 600.0	$ 600.0
Less:		
Outstanding Letters of Credit	1.3	2.3
Outstanding Indebtedness	598.0	—
Unused Capacity	$ 0.7	$ 597.7

Contractual Obligations

As of December 31, 2022, the Company has contractual obligations related to lease arrangements and purchase commitments. The lease arrangements are for certain equipment and facilities. As of December 31, 2022, the Company had fixed lease payment obligations of $23.5 million, with $6.5 million due within 12 months. The Company has non-cancelable purchase commitments of $132.8 million, with an estimated $125.7 million being due within 12 months.

Critical Accounting Policies and Estimates

Our consolidated financial statements and related disclosures are prepared in accordance with US GAAP, which requires management to make estimates, judgments and assumptions that affect the amounts reported. Note 2, “Summary of significant accounting policies” of the Notes to Consolidated Financial Statements in Part II, Item 8 of this Form 10-K describes the accounting policies and methods used in the preparation of the Company’s consolidated financial statements. Management considers an accounting policy to be critical if it is important to reporting our financial condition and results of operations, and if it requires significant judgment and estimates on the part of management in its application. Management bases its estimates on historical experience and on various other assumptions it believes to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities and the reported amounts of revenues and expenses that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Management believes the Company’s critical accounting policies and estimates are those related to revenue recognition, contingent consideration, and income taxes.

Revenue Recognition

The Company's product sales are recognized at a point-in-time generally upon delivery to the customer, depending on the performance obligation which the Company is delivering. The Company's CDMO arrangements are generally recognized on a percentage of completion basis utilizing a cost-to-cost method. Revenues are recognized as a percentage of the work completed during the period in an amount that reflects the percentage of the consideration which the Company expects to receive in exchange for the product or services.

For contracts with multiple performance obligations, the Company allocates the contract price to each performance obligation on a relative standalone selling price basis using the Company's best estimate of the standalone selling price of each distinct product or service in the contract. Certain contracts may include lease components which are recognized under Accounting Standards Codification ("ASC") 842. The primary method used to estimate standalone selling price is the price observed in standalone sales to customers, however when prices in standalone sales are not available the Company may use third-party pricing for similar products or services or estimate the standalone selling price based on the best available information.

Revenues are recorded net of reserves established for applicable discounts and allowances that are offered within contracts with customers. The Company makes estimates of the transaction price, including variable consideration that is subject to a constraint. Estimates of variable consideration includes allowances for returns, specialty distributor fees, wholesaler fees, prompt payment discounts, government rebates, chargebacks and rebates under managed care plans. Revenues from sales of products is recognized to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with such variable consideration is subsequently resolved. Provisions for variable consideration revenues from sales of products are recorded at the net sales price. For additional information on our revenues, refer to Note 11, "Revenue recognition" in the Notes to Consolidated Financial Statements in Part II, Item 8. of this Form 10-K.

Contingent Consideration

In connection with the Company's acquisitions accounted for as business combinations, the Company records contingent consideration associated with sales-based royalties, sales-based milestones and development and regulatory milestones at fair value, as applicable. The fair value model used to calculate these obligations is based on the income approach (a discounted cash flow model) that has been risk adjusted based on the probability of achievement of net sales and achievement of the milestones. The inputs the Company uses for determining the fair value of the contingent consideration associated with sales-based royalties, sales-based milestones and development and regulatory milestones are Level 3 fair value measurements. The Company re-evaluates the fair value of contingent consideration on a quarterly basis. Changes in the fair value can result from adjustments to the discount rates and updates in the assumed timing of or achievement of net sales and/or the achievement of development and regulatory milestones.

The Company's acquisitions accounted for as asset acquisitions may also include contingent consideration payments to be made for sales-based royalties, sales-based milestones and development and regulatory milestones. We assess whether such contingent consideration meets the definition of a derivative. Contingent consideration payments in an asset acquisition not required to be accounted for as derivatives are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be accounted for as derivatives are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date. For additional information on the Company's contingent consideration, refer to Note 6, "Fair value measurements" in the Notes to Consolidated Financial Statements in Part II, Item 8. of this Form 10-K.

Income Taxes

The Company recognizes deferred tax assets and liabilities for future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax bases and net operating loss and R&D tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which those temporary differences are expected to be recovered or settled. Valuation allowances are recorded as appropriate to reduce deferred tax assets to the amount considered likely to be realized.

The Company's income tax expense, deferred tax assets and liabilities and liabilities for unrecognized tax benefits reflect management's best assessment of estimated current and future taxes to be paid. As tax laws are complex and subject to different interpretations, significant management judgement is required in (1) calculating the Company's income tax expense, deferred tax assets and deferred tax liabilities, (2) determining any valuation allowance recorded against deferred tax assets and (3) evaluating the amount of unrecognized tax benefits, as well as the interest and penalties related to such uncertain tax positions. The Company's estimates and assumptions may differ from tax benefits ultimately realized. For additional information on the Company's income taxes, refer to Note 13, "Income taxes" in the Notes to Consolidated Financial Statements in Part II, Item 8. of this Form 10-K.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

For a discussion of additional risks arising from our operations, see “Item 1A—Business—Risk Factors” in this 2022 Annual Report.

Market Risks

We have interest rate and foreign currency market risk. Because of the short-term maturities of our cash and cash equivalents, we believe that an increase in market rates would likely not have a significant impact on the realized value of our investments.

Interest Rate Risk

We have debt with a mix of fixed and variable rates of interest. Floating rate debt carries interest based generally on the eurocurrency rate, as defined in our Credit Agreement, plus an applicable margin. We manage the impact of interest rate changes on our variable debt through derivative instruments such as interest rate swap arrangements. For debt that we have not hedged through our interest rate swap arrangements increases in interest rates could therefore increase the associated interest payments that we are required to make on this debt. See Note 8, "Debt," in the Notes to Consolidated Financial Statements in Part II, Item 8. of this Form 10-K.

We have assessed our exposure to changes in interest rates by analyzing the sensitivity to our operating results assuming various changes in market interest rates. A hypothetical increase of one percentage point in the eurocurrency rate as of December 31, 2022 would increase our interest expense by approximately $6.1 million annually.

Foreign Currency Exchange Rate Risk

We have exposure to foreign currency exchange rate fluctuations worldwide and primarily with respect to the Euro, Canadian dollar, Swiss franc and British pound. We manage our foreign currency exchange rate risk primarily by either entering into foreign currency hedging transactions or incurring operating expenses in the local currency in the countries in which we operate, to the extent practicable. We currently do not hedge all of our foreign currency exchange exposure and the movement of foreign currency exchange rates could have an adverse or positive impact on our results of operations.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Emergent BioSolutions Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Emergent BioSolutions Inc. and subsidiaries (the Company) as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15 (collectively referred to as the "consolidated financial statements"). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 1, 2023 expressed an adverse opinion thereon.

The Company's Ability to Continue as a Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As discussed in Note 2 to the financial statements, the Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to its Credit Agreement, has a working capital deficiency, and has stated that substantial doubt exists about the Company's ability to continue as a going concern. Management's evaluation of the events and conditions and management's plans regarding these matters are also described in Note 2. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Critical Audit Matters

The critical audit matters communicated below are matters arising from the current period audit of the financial statements that were communicated or required to be communicated to the audit committee and that: (1) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matters below, providing separate opinions on the critical audit matters or on the accounts or disclosures to which they relate.

Revenue recognition

Description of the Matter

As described in Notes 2 and 11 to the consolidated financial statements, the Company recognized revenues of $373.7 million for the year ended December 31, 2022 related to the sale of nasal naloxone products. For these product sales, revenue is recognized at a point in time, and the Company's estimation of variable consideration includes allowances for returns, certain fees, discounts, rebates and chargebacks.

Auditing revenue recognition for nasal naloxone product sales involved significant auditor judgment because it involves subjective assumptions and estimates made by management. For example, auditing management's estimated rebates and returns for commercial arrangements are subject to significant judgment because their expected value is based on assumptions including sales or invoice data, expected utilization rates, historical payment experience, and changes in product pricing or customer contracts. These estimates are forward-looking and could be affected by future economic conditions and the competitive environment.

How We Addressed the Matter in Our Audit

We obtained an understanding, evaluated the design, and tested the operating effectiveness of controls over the Company's revenue recognition for nasal naloxone product sales. For example, we tested controls over management's review over the assumptions used in the estimation of the rebates and returns. We also tested management's controls over the completeness and accuracy of the data used in the underlying calculations.

To test revenue recognized, our audit procedures included the following primary procedures, amongst others. We estimated the rebates and returns accrual using the Company's historical data as well as externally available information and compared the result to the Company's estimated rebates and returns accrual. We evaluated the Company's ability to accurately estimate the accrual for rebates by comparing historically recorded accruals to the actual amount that was ultimately paid by the Company.

Evaluation of Goodwill for impairment

Description of the Matter

As of December 31, 2022, the Company's goodwill balance was $218.2 million. As discussed in Notes 2 and 5 of the consolidated financial statements, goodwill is tested annually for impairment at the reporting unit level. The Company evaluated goodwill for impairment as of October 1, 2022 using an income based (discounted cash flows) approach. As a result of the Company's annual goodwill impairment test, the Company recorded a $6.7 million goodwill impairment charge related to the CDMO – Services reporting unit of the Services reporting segment, which is included in "Goodwill impairment" in the Consolidated Statement of Operations for the year ended December 31, 2022.

Auditing management's goodwill impairment tests involved a high degree of auditor judgment due to the significant estimation required to determine the fair value of each reporting unit. In particular, the fair value estimate for certain reporting units was sensitive to significant assumptions such as the determination of guideline companies, discount rate, revenue growth rates and operating margins used to estimate future cash flows, which are affected by expectations about future market or economic conditions.

How We Addressed the Matter in Our Audit	We obtained an understanding, evaluated the design and tested the operating effectiveness of controls over the Company's goodwill impairment evaluation process. For example, we tested controls over management's review of the data used in their valuation models and reviewed significant assumptions discussed above used in determining the reporting unit fair values. To test the estimated fair value of the Company's reporting units, with the assistance of our valuation professionals, our audit procedures included, among others, assessing fair value methodologies and testing the significant assumptions discussed above. We compared the significant assumptions used by management to current industry and economic trends, the Company's historical trends with consideration given to changes in the Company's business, customer base or product mix and other relevant factors. We assessed the historical accuracy of management's estimates and performed sensitivity analyses of significant assumptions to evaluate the changes in the fair value of the reporting units that would result from changes in the assumptions. We also evaluated the reconciliation of the estimated aggregate fair value of the reporting units to the Company's market capitalization.

/s/ Ernst & Young LLP

We have served as the Company's auditor since 2004.
Tysons, Virginia
March 1, 2023

Emergent BioSolutions Inc. and Subsidiaries
Consolidated Balance Sheets
(in millions, except per share data)

	December 31,	
	2022	2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 642.6	$ 576.1
Restricted cash	—	0.2
Accounts receivable, net	158.4	274.7
Inventories, net	351.8	350.8
Prepaid expenses and other current assets	57.9	70.3
Total current assets	1,210.7	1,272.1
Property, plant and equipment, net	817.6	800.1
Intangible assets, net	728.8	604.6
Goodwill	218.2	224.9
Other assets	191.3	57.3
Total assets	$ 3,166.6	$ 2,959.0
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 103.5	$ 128.9
Accrued expenses	34.9	51.7
Accrued compensation	88.3	88.7
Debt, current portion	957.3	31.6
Other current liabilities	45.9	72.9
Total current liabilities	1,229.9	373.8
Debt, net of current portion	448.5	809.4
Deferred tax liability	71.8	94.9
Other liabilities	33.4	61.9
Total liabilities	1,783.6	1,340.0
Stockholders’ equity:		
Preferred stock, $0.001 par value; 15.0 shares authorized, no shares issued and outstanding	—	—
Common stock, $0.001 par value; 200.0 shares authorized, 55.7 and 55.1 shares issued; 50.1 and 51.3 shares outstanding, respectively.	0.1	0.1
Treasury stock, at cost, 5.6 and 3.8 common shares, respectively	(227.7)	(152.2)
Additional paid-in capital	873.5	829.4
Accumulated other comprehensive income (loss), net	3.1	(16.1)
Retained earnings	734.0	957.8
Total stockholders’ equity	1,383.0	1,619.0
Total liabilities and stockholders’ equity	$ 3,166.6	$ 2,959.0

The accompanying notes are an integral part of the consolidated financial statements.

Emergent BioSolutions Inc. and Subsidiaries
Consolidated Statements of Operations
(in millions, except per share data)

	Year Ended December 31,		
	2022	2021	2020
Revenues:			
Product sales, net	$ 966.2	$ 1,023.9	989.8
CDMO:			
Services	108.4	334.9	166.7
Leases	4.9	299.7	283.8
Total CDMO	113.3	634.6	450.5
Contracts and grants	41.4	134.2	115.1
Total revenues	1,120.9	1,792.7	1,555.4
Operating expenses:			
Cost of product sales	424.1	382.0	392.0
Cost of CDMO	269.6	375.5	132.0
Research and development	193.0	234.0	234.5
Selling, general and administrative	340.3	348.4	303.3
Goodwill impairment	6.7	41.7	—
Amortization of intangible assets	59.9	58.5	59.8
Total operating expenses	1,293.6	1,440.1	1,121.6
Income (loss) from operations	(172.7)	352.6	433.8
Other income (expense):			
Interest expense	(37.3)	(34.5)	(31.3)
Other, net	(11.7)	(3.7)	4.7
Total other income (expense), net	(49.0)	(38.2)	(26.6)
Income (loss) before income taxes	(221.7)	314.4	407.2
Income tax provision	2.1	83.5	102.1
Net income (loss)	$ (223.8)	$ 230.9	$ 305.1
Net income (loss) per common share			
Basic	$ (4.47)	$ 4.32	$ 5.79
Diluted	$ (4.47)	$ 4.27	$ 5.67
Shares used in computing net income (loss) per common share			
Basic	50.1	53.5	52.7
Diluted	50.1	54.1	53.8

The accompanying notes are an integral part of the consolidated financial statements.

Emergent BioSolutions Inc. and Subsidiaries
Consolidated Statements of Comprehensive Income (Loss)
(in millions)

	Year Ended December 31,		
	2022	2021	2020
Net income (loss)	$ (223.8)	$ 230.9	$ 305.1
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustment	1.0	(1.0)	(1.7)
Unrealized gains (losses) on hedging activities	10.7	6.5	(9.4)
Unrealized gain (losses) on pension benefit obligation	7.5	3.7	(4.3)
Total other comprehensive income (loss), net of tax	19.2	9.2	(15.4)
Comprehensive income (loss), net of tax	$ (204.6)	$ 240.1	$ 289.7

The accompanying notes are an integral part of the consolidated financial statements.

Emergent BioSolutions Inc. and Subsidiaries
Consolidated Statements of Cash Flows
(in millions)

	Year Ended December 31,		
	2022	2021	2020
Operating Activities			
Net income (loss)	$ (223.8)	$ 230.9	$ 305.1
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities:			
Stock-based compensation expense	45.1	42.4	51.0
Depreciation and amortization	143.3	123.8	114.5
Change in fair value of contingent obligations, net	2.6	2.9	31.7
Amortization of deferred financing costs	4.1	4.1	3.5
Impairments	6.7	41.7	29.0
Deferred income taxes	(19.0)	46.9	(2.4)
Write off of contract asset and liability	—	(17.2)	—
Other	6.4	2.0	(5.2)
Changes in operating assets and liabilities:			
Accounts receivable	114.7	(48.2)	49.0
Inventories	(51.9)	(44.0)	(83.2)
Prepaid expenses and other assets	(19.9)	7.7	(29.2)
Accounts payable	(14.0)	(2.5)	18.7
Accrued expenses and other liabilities	(66.7)	(9.2)	19.4
Accrued compensation	0.1	4.0	21.8
Income taxes receivable and payable, net	28.6	(32.4)	1.1
Contract liabilities	9.6	(31.8)	11.2
Net cash provided by (used in) operating activities	(34.1)	321.1	536.0
Investing Activities			
Purchases of property, plant and equipment	(115.8)	(225.0)	(141.0)
Royalty settlement payment	(21.8)	—	—
Milestone payment from prior asset acquisition	—	—	(10.0)
Asset acquisitions	(243.7)	—	—
Net cash used in investing activities	(381.3)	(225.0)	(151.0)
Financing Activities			
Purchases of treasury stock	(82.1)	(106.0)	—
Proceeds from senior unsecured notes	—	—	450.0
Principal payments on convertible senior notes	—	(10.6)	—
Proceeds from revolving credit facility	598.0	—	—
Principal payments on revolving credit facility	—	—	(373.0)
Principal payments on term loan facility	(33.8)	(25.3)	(14.1)
Proceeds from stock-based compensation activity	5.0	15.9	31.6
Taxes paid for stock-based compensation activity	(5.9)	(13.8)	(13.8)
Debt issuance costs	—	—	(8.4)
Contingent consideration payments	—	(1.2)	(2.8)
Net cash provided by (used in) financing activities:	481.2	(141.0)	69.5
Effect of exchange rate changes on cash, cash equivalents and restricted cash	0.5	(0.3)	(1.0)
Net change in cash, cash equivalents and restricted cash	66.3	(45.2)	453.5
Cash, cash equivalents and restricted cash, beginning of period	576.3	621.5	168.0
Cash, cash equivalents and restricted cash, end of period	$ 642.6	$ 576.3	$ 621.5
Supplemental disclosure of cash flow information:			
Cash paid for interest	$ 33.0	$ 30.4	$ 21.0
Cash paid for income taxes	$ 6.2	$ 71.6	$ 109.3
Supplemental information on non-cash investing and financing activities:			
Purchases of property, plant and equipment unpaid at period end	$ 9.4	$ 20.0	$ 22.0
Purchases of treasury stock unpaid at period end	$ —	$ 6.6	$ —
Reconciliation of cash and cash equivalents and restricted cash:			
Cash and cash equivalents	$ 642.6	$ 576.1	$ 621.3
Restricted cash	—	0.2	0.2
Total	$ 642.6	$ 576.3	$ 621.5

The accompanying notes are an integral part of the consolidated financial statements.

Emergent BioSolutions Inc. and Subsidiaries
Consolidated Statement of Changes in Stockholders' Equity
(in millions, except per share data)

	$0.001 Par Value Common Stock		Additional Paid-In Capital	Treasury Stock		Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Stockholders' Equity
	Shares	Amount		Shares	Amount			
Balance at January 1, 2020	53.0	$ 0.1	$ 716.1	(1.2)	$ (39.6)	$ (9.9)	$ 421.8	$ 1,088.5
Net income	—	—	—	—	—	—	305.1	305.1
Other comprehensive loss, net of tax	—	—	—	—	—	(15.4)	—	(15.4)
Share-based compensation activity	1.3	—	68.8	—	—	—	—	68.8
Balance at December 31, 2020	54.3	$ 0.1	$ 784.9	(1.2)	$ (39.6)	$ (25.3)	$ 726.9	$ 1,447.0
Net income	—	—	—	—	—	—	230.9	230.9
Other comprehensive income, net of tax	—	—	—	—	—	9.2	—	9.2
Share-based compensation activity	0.8	—	44.5	—	—	—	—	44.5
Repurchases of common stock	—	—	—	(2.6)	(112.6)	—	—	(112.6)
Balance at December 31, 2021	55.1	$ 0.1	$ 829.4	(3.8)	$ (152.2)	$ (16.1)	$ 957.8	$ 1,619.0
Net loss	—	—	—	—	—	—	(223.8)	(223.8)
Other comprehensive income, net of tax	—	—	—	—	—	19.2	—	19.2
Share-based compensation activity	0.6	—	44.1	—	—	—	—	44.1
Repurchases of common stock	—	—	—	(1.8)	(75.5)	—	—	(75.5)
Balance at December 31, 2022	55.7	$ 0.1	$ 873.5	(5.6)	$ (227.7)	$ 3.1	$ 734.0	$ 1,383.0

The accompanying notes are an integral part of the consolidated financial statements.

1. Nature of the business and organization

Organization and business

Emergent BioSolutions Inc. (“Emergent,” the “Company,” “we,” “us,” and “our”) is a global life sciences company focused on providing innovative preparedness and response solutions addressing accidental, deliberate, and naturally occurring Public Health Threats ("PHTs"). The Company's solutions include a product portfolio, a product development portfolio, and a contract development and manufacturing ("CDMO") services portfolio.

The Company is focused on the following five PHT categories: chemical, biological, radiological, nuclear and explosives ("CBRNE"); emerging infectious diseases ("EID"); travel health; emerging health crises; and acute/emergency care. The Company has a product portfolio of thirteen products (vaccines, therapeutics, and drug-device combination products). The revenue generated by the products comprises a substantial portion of the Company's revenue. The Company has one product candidate that is procured under special circumstances by the United States government ("USG"), although it is not approved by the United States Food and Drug Administration ("FDA"). The Company structures the business with a focus on markets and customers. As such, the key components of the business structure include the following three product and service categories: Government - Medical Countermeasures ("MCM") Products, Commercial Products, and CDMO Services. The Company operates as two operating segments: (1) a products segment ("Products") consisting of the Government - MCM and Commercial product categories and (2) a services segment ("Services") focused on CDMO services (Note 16, "Segment information").

The Company's products and services include:

Government - MCM Products

- ACAM2000®, (Smallpox (Vaccinia) Vaccine, Live), the only single-dose smallpox vaccine licensed by the FDA for active immunization against smallpox disease for persons determined to be at high risk for smallpox infection;
- Anthrasil® (Anthrax Immune Globulin Intravenous (human)), the only polyclonal antibody therapeutic licensed by the FDA and Health Canada for the treatment of inhalational anthrax in combination with appropriate antibacterial drugs;
- Anthrax vaccines, including our AV7909 (Anthrax vaccine adsorbed (AVA), adjuvanted) procured product candidate being developed as a next-generation anthrax vaccine for post-exposure prophylaxis and BioThrax® (Anthrax Vaccine Adsorbed), the only vaccine licensed by the FDA for the general use prophylaxis and post-exposure prophylaxis of anthrax disease. AV7909 has not been approved by the FDA, but is procured by certain authorized government buyers for their use;
- BAT® (Botulism Antitoxin Heptavalent (A,B,C,D,E,F,G)-(Equine)), the only heptavalent antitoxin licensed by the FDA and Health Canada for the treatment of symptomatic botulism;
- CNJ-016® (Vaccinia Immune Globulin Intravenous (Human) (VIGIV)), the only polyclonal antibody therapeutic licensed by the FDA and Health Canada to address certain complications from smallpox vaccination;
- Ebanga™ (ansuvimab-zykl) is a monoclonal antibody with antiviral activity provided through a single IV infusion for the treatment of Ebola. Under the terms of a collaboration with Ridgeback Biotherapeutics ("Ridgeback"). Emergent will be responsible for the manufacturing, sale, and distribution of Ebanga™ in the U.S. and Canada, and Ridgeback will serve as the global access partner for Ebanga™;
- Raxibacumab injection, the first fully human monoclonal antibody therapeutic licensed by the FDA for the treatment and prophylaxis of inhalational anthrax;
- RSDL® (Reactive Skin Decontamination Lotion Kit), the only medical device cleared by the FDA that is intended to remove or neutralize chemical warfare agents from the skin, including: tabun, sarin, soman, cyclohexyl sarin, VR, VX, mustard gas and T-2 toxin;
- TEMBEXA®, an oral antiviral formulated as 100 mg tablets and 10 mg/mL oral suspension dosed once weekly for two weeks which has been approved by the FDA for the treatment of smallpox disease caused by variola virus in adult and pediatric patients, including neonates; and

- Trobigard® atropine sulfate, obidoxime chloride auto-injector, a combination drug-device auto-injector procured product candidate that contains atropine sulfate and obidoxime chloride. It was approved in Belgium in 2021 but has not been approved by the FDA. Trobigard is procured by certain authorized government buyers under special circumstances for potential use as a nerve agent countermeasure outside of the U.S.

Commercial Products

- NARCAN® (naloxone HCl) Nasal Spray, an intranasal formulation of naloxone approved by the FDA and Health Canada for the emergency treatment of known or suspected opioid overdose as manifested by respiratory and/or central nervous system depression;
- Vaxchora® (Cholera Vaccine, Live, Oral), the first vaccine approved by the FDA for the prevention of cholera, which we have agreed to sell as part of our travel health business; and
- Vivotif® (Typhoid Vaccine Live Oral Ty21a), a live attenuated vaccine for oral administration for the prevention of typhoid fever, which we have agreed to sell as part of our travel health business.

Services - Contract Development and Manufacturing

The Company's services line focused on CDMO offerings cover development services, drug substance manufacturing, drug product manufacturing, and when necessary, suite reservations, which depending on facts and circumstances could be considered a lease. These services are provided across the pharmaceutical and biotechnology industries as well as the USG and non-governmental organizations. The Company's technology platforms include mammalian, microbial, viral, plasma and advanced therapies utilizing the Company's core capabilities for manufacturing to third parties on a clinical and commercial (small and large) scale. Additional services include fill/finish formulation and analytical development services for injectable and other sterile products, inclusive of process design, technical transfer, manufacturing validations, aseptic filling, lyophilization, final packaging and stability studies, as well as manufacturing of vial and pre-filled syringe formats on multiple platforms.

Asset Acquisition

During the year ended December 31, 2022, the Company acquired from Chimerix ("the Seller") the exclusive worldwide rights to brincidofovir, including TEMBEXA® and related assets (the “Transaction”). TEMBEXA is an oral antiviral medical countermeasure to treat smallpox approved by the FDA in June 2021. Under the terms of the Asset Purchase Agreement (the "Purchase Agreement"), the Company paid $238.0 million upon closing of the Transaction, and is subject to potential milestone payments of up to $124.0 million contingent on the potential exercise by the USG of procurement options. The closing payment and the milestone payments were based on the actual procurement value of the procurement contract (the "BARDA Contract") with the Biomedical Advanced Research and Development Authority (“BARDA”). Each milestone payment is associated with the exercise of future BARDA procurement options of TEMBEXA following the BARDA Contract base period. The Seller is also eligible to receive up to $12.5 million in regulatory milestones associated with the SymBio Pharmaceuticals Ltd. brincidofovir licensing arrangements assumed by the Company in the Transaction. The milestone payments will be recorded when the associated procurement options have been exercised and/or the regulatory milestones have been met and the consideration is paid or becomes payable. The total consideration paid in the Transaction was allocated based on the proportionate fair value of the assets acquired. We recorded $156.9 million in intangible assets, net and $82.3 million in inventories, net upon execution of the Transaction on our consolidate balance sheet.

The Seller may also earn a 20% royalty on future gross profit of TEMBEXA in the United States associated with volumes above 1.7 million treatment courses of therapy during the exclusivity period of TEMBEXA. Outside of the United States, the Purchase Agreement also allows the Seller to earn a 15% royalty on all gross profit associated with TEMBEXA sales during the exclusivity period of TEMBEXA on a market-to-market basis. Refer to Note 5 "Intangible assets and goodwill" for additional information around the impacts of this asset acquisition on the current period results.

2. Summary of significant accounting policies

Basis of presentation and consolidation

Our financial statements are prepared in conformity with U.S. generally accepted accounting principles ("GAAP"). The accompanying consolidated financial statements include the accounts of Emergent and its wholly owned subsidiaries. All significant inter-company accounts and transactions have been eliminated in consolidation. Reclassifications of certain prior period amounts have been made to conform to the current period presentation.

During the year ended December 31, 2022, the Company revised the reporting that the chief operating decision maker ("the CODM") reviews in order to assess Company performance. The CODM manages the business with a focus on two reportable segments: (1) Products segment consisting of Government - MCM and Commercial products and (2) Services segment focused on CDMO services.

Going Concern

The consolidated financial statements have been prepared on the going concern basis of accounting, which assumes the Company will continue to operate as a going concern and which contemplates the realization of assets and the satisfaction of liabilities and commitments in the normal course of business.

As of December 31, 2022, there is $598.0 million outstanding on the our senior revolving credit facility ("Revolving Credit Facility") and $362.8 million on our senior term loan facility ("Term Loan Facility" and together with the Revolving Credit Facility, the "Senior Secured Credit Facilities") that mature in October 2023, which is within one year of the date that the consolidated financial statements for the year ended December 31, 2022 are issued. The Company determined that there is substantial doubt about the Company's ability to continue as a going concern within one year after the date that the financial statements are issued as a result of these pending maturities. This evaluation considered the potential mitigating effect of management's plans that have not been fully implemented. Management evaluated the mitigating effect of its plans to determine if it is probable that (1) the plans will be effectively implemented within one year after the date the financial statements are issued, and (2) when implemented, the plans will mitigate the relevant conditions or events that raise substantial doubt about the entity's ability to continue as a going concern. The Company's plan to alleviate the substantial doubt includes amending its existing Senior Secured Credit Facilities that are due October 2023.

On February 14, 2023, the Company entered into a Consent, Limited Waiver, and Third Amendment to the Amended and Restated Credit Agreement (the "Third Credit Agreement Amendment", "Credit Agreement" and as amended, the "Amended Credit Agreement") relating to the Senior Secured Credit Facilities. Pursuant to the Third Credit Agreement Amendment, the requisite lenders consented to our sale of our travel health business to Bavarian Nordic substantially in accordance with the terms of the Sale Agreement. The proceeds from the transaction will be deposited into a cash collateral account with the Administrative Agent and will, unless otherwise agreed to by the Company and the requisite lenders, be used to repay the outstanding Term Loan Facility on the expiration of the Limited Waiver (as described below). We currently expect the transaction to close in the second quarter of 2023, but we can provide no assurance that the transaction will close prior to the October 2023 maturity of the Term Loan Facility, or at all.

Pursuant to the Third Credit Agreement Amendment the requisite lenders have agreed to a limited waiver of any defaults or events of default that result from (a) any violation of the financial covenants set forth in the Senior Secured Credit Facilities with respect to the fiscal quarters ending December 31, 2022 and March 31, 2023 and (b) the going concern qualification or exception contained in the audited financial statements for the fiscal year ending December 31, 2022. This limited waiver will expire on the earlier to occur of (i) any other event of default and (ii) April 17, 2023. During this period the Company is working with lenders under the Senior Secured Credit Facilities in connection with replacing such facilities before their October 2023 maturity with revised terms and conditions. The Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to the Credit Agreement.

While the Company is in the process of replacing and expects to replace the Senior Secured Credit Facilities before they mature, management cannot conclude that it is probable that the Company will be able to obtain such debt refinancing on commercially reasonable terms or at all until a new credit facility is in place. The Company is currently working with its lenders to refinance the Senior Secured Credit Facilities with revised terms and conditions. The extent to which the Company will be able to affect such refinancing, replacement or maturity extension on terms that are favorable or at all is dependent on a number of uncertain factors, including then-prevailing credit and other market conditions, economic conditions, particularly in the pharmaceutical and biotechnology industry, disruptions or volatility caused by factors such as COVID-19, regional conflicts, inflation, and supply chain disruptions. In addition, rising interest rates could limit our ability

to refinance the Senior Secured Credit Facilities when they mature or cause us to pay higher interest rates upon refinancing.

The Company has $642.6 million of cash on hand at December 31, 2022. On January 9, 2023, the Company announced the 2023 organizational restructuring Plan (the “Plan”) intended to reduce operating costs, improve operating margins, and continue advancing the Company’s ongoing commitment to profitable growth. The Plan includes a reduction of the Company’s current workforce by approximately five percent.

Use of estimates

The preparation of financial statements requires management to make estimates, judgments and assumptions that affect reported amounts and disclosures for asset impairments, revenue recognition, allowances for doubtful accounts, inventory, depreciation and amortization, business combinations, contingent consideration, stock-based compensation, income taxes, and other contingencies. Management continually re-evaluates its estimates, judgments and assumptions. These estimates are sometimes complex, sensitive to changes in assumptions and require fair value determinations using Level 3 fair value measurements. Actual results may differ materially from those estimates.

Cash, cash equivalents and restricted cash

Cash equivalents are highly liquid investments with a maturity of 90 days or less at the date of purchase and consist of time deposits and investments in money market funds with commercial banks and financial institutions. Also, the Company maintains cash balances with financial institutions in excess of insured limits. Restricted cash includes cash that is not readily available for use in the Company's operating activities. Restricted cash is primarily comprised of cash pledged under letters of credit.

Fair value measurements

Fair value is defined as the exchange price that would be received for an asset or paid to transfer a liability, an exit price, in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value include:

Level 1 — Observable inputs for identical assets or liabilities such as quoted prices in active markets;
Level 2 — Inputs other than quoted prices in active markets that are either directly or indirectly observable; and
Level 3 — Unobservable inputs in which little or no market data exists, which are therefore developed by the Company using estimates and assumptions that reflect those that a market participant would use.

On a recurring basis, the Company measures and records money market funds (Level 1), interest-rate swap arrangements and time deposits (Level 2) and contingent purchase consideration (Level 3) using fair value measurements in the accompanying financial statements. The carrying amounts of the Company's short-term financial instruments, which include cash and cash equivalents, accounts receivable and accounts payable approximate their fair values due to their short maturities. The carrying amounts of the Company’s long-term variable interest rate debt arrangements (Level 2) approximate their fair values.

Significant customers and accounts receivable

Billed accounts receivable are stated at invoice amounts and consist of amounts due from the USG, commercial CDMO customers, as well as amounts due under reimbursement contracts with other government entities and non-government organizations. The Company's branded and generic opioid overdose reversal product is sold commercially through physician-directed or standing order prescriptions at retail pharmacies, as well as state health departments, law enforcement agencies, state and local community based organizations, substance abuse centers and federal agencies. If necessary, the Company records a reserve for credit losses to allow for amounts which may be unrecoverable. This provision is based upon an analysis of the Company's prior collection experience, customer creditworthiness and current economic trends. Amounts determined to be uncollectible are charged or written-off against the reserve. Unbilled accounts receivable relates to various service contracts for which work has been performed and the Company has a right to bill but invoicing has not yet occurred. Contract assets include revenues recognized in advance of billings and the Company does not have a right to invoice the customer under the terms of the contract. The Company has receivables from contracts containing lease components. At each reporting period, the Company assesses whether it is probable that the Company will collect all future lease payments. The Company considers payment history and current credit status when assessing collectability. The Company does not adjust our receivables for the effects of a significant financing component at contract inception if we expect to collect the receivables in one year or less from the time of sale.

Concentration Risk

Customers

The Company has long-term contracts with the USG that expire at various times from 2023 through 2036. The Company has derived a significant portion of its revenue from sales of our Government - MCM products under contracts with the USG. The Company's current USG contracts do not necessarily increase the likelihood that it will secure future comparable contracts with the USG. The Company expects that a significant portion of the business will continue to be under government contracts that present a number of risks that are not typically present in the commercial contracting process. USG contracts for ACAM2000 and Anthrax Vaccines and other medical countermeasures products are subject to unilateral termination or modification by the government. The Company may fail to achieve significant sales of its medical countermeasures products, including ACAM2000 and Anthrax Vaccines to customers in addition to the USG, which would harm their growth opportunities. The Company's other product sales, largely Nasal Naloxone Products, are largely sold commercially through physician-directed or standing order prescriptions at retail pharmacies, as well as to state health departments, local law enforcement agencies, community-based organizations, substance abuse centers and other federal agencies. In 2022, we filed our supplemental New Drug Application for NARCAN® (naloxone HCI) Nasal Spray, as an over-the-counter emergency treatment which if approved would further broaden our customer base. Our CDMO customers are generally third-party pharmaceutical companies. Refer to Footnote 11, "Revenue recognition" for more information regarding significant customers.

Although the Company seeks to expand its customer base and to renew its agreements with its customers prior to expiration of a contract, a delay in securing a renewal or a failure to secure a renewal or securing a renewal on less favorable terms may have a material adverse effect on the Company’s financial condition and results of operations.

The Company’s accounts receivable do not represent a significant concentration of credit risk. The USG accounted for approximately 43%, 50% and 64% of total revenues for 2022, 2021 and 2020, respectively. The Company’s accounts receivable as of December 31, 2022 and 2021, consist primarily of amounts due from the USG or other large multi-national highly reputable customers for product sales, CDMO services or from government agencies under government grants. Management does not deem credit risk to be significant.

Financial Institutions

Cash and cash equivalents are maintained with several financial institutions. The Company has deposits held with banks that exceed the amount of insurance provided on such deposits. Generally, these deposits may be redeemed upon demand and are maintained with financial institutions of reputable credit and, therefore, bear minimal credit risk.

Lender Counterparties

There is lender counterparty risk associated with the Company's revolving credit facility and derivatives instruments. There is risk that the Company’s revolving credit facility investors and derivative counterparties will not be available to fund as obligated. If funding under the revolving credit facility is unavailable, the Company may have to acquire a replacement credit facility from different counterparties at a higher cost or may be unable to find a suitable replacement. The Company seeks to manage risks from its revolving credit facility and derivative instruments by contracting with experienced large

financial institutions and monitoring the credit quality of its lenders. As of December 31, 2022, the Company does not anticipate nonperformance by any of its counterparties.

Inventories, net

Inventories are stated at the lower of cost or net realizable value with cost being determined using a standard cost method, which approximates average cost. Average cost consists primarily of material, labor and manufacturing overhead expenses (including fixed production-overhead costs) and includes the services and products of third-party suppliers. The Company analyzes its inventory levels quarterly and writes down, in the applicable period, inventory that has become obsolete, inventory that has a cost basis in excess of its expected net realizable value and inventory in excess of expected customer demand. The Company also writes off, in the applicable period, the costs related to short-dated, contaminated or expired inventory. Costs of purchased inventories are recorded using weighted-average costing. The Company determines normal capacity for each production facility and allocates fixed production-overhead costs on that basis.

The Company records inventory acquired in business combinations utilizing the comparative sales method, which estimates the expected sales price reduced for all costs expected to be incurred to complete/dispose of the inventory with a profit on those costs.

Property, plant and equipment, net

Property, plant and equipment are stated at cost less accumulated depreciation and impairments. subject to reviews for impairment whenever events or changes in circumstances indicate that the carrying amount of the asset may not be recoverable. The cost of normal, recurring or periodic repairs and maintenance activities related to property, plant and equipment are expensed as incurred. The cost for planned major maintenance activities, including the related acquisition or construction of assets, is capitalized if the repair will result in future economic benefits.

Interest costs incurred during the construction of major capital projects are capitalized until the underlying asset is ready for its intended use, at which point the interest costs are amortized as depreciation expense over the life of the underlying asset.

The Company capitalizes internal-use software when both (a) the software is internally developed, acquired, or modified solely to meet the entity’s internal needs and (b) during the software’s development or modification, no substantive plan either exists or is being developed to market the software externally. Capitalization of qualifying internal-use software costs begins when the preliminary project stage is completed, management with the relevant authority, implicitly or explicitly, authorizes and commits to the funding of the software project, and it is probable that the project will be completed and the software will be used to perform the function intended.

The Company generally depreciates or amortizes the cost of its property, plant and equipment using the straight-line method over the estimated useful lives of the respective assets, which are summarized as follows:

Land	Not depreciated
Buildings	31-39 years
Building improvements	10-39 years
Furniture and equipment	3-15 years
Software	3-7 years
Leasehold improvements	Lesser of the asset life or lease term

Upon retirement or sale, the cost of assets disposed of and the related accumulated depreciation are removed from the accounts and any resulting gain or loss is credited or charged to operations. Repairs and maintenance costs are expensed as incurred.

The Company determines the fair value of the property, plant and equipment acquired in a business combination utilizing either the cost approach or the sales comparison approach. The cost approach is determined by establishing replacement cost of the asset and then subtracting any value that has been lost due to economic obsolescence, functional obsolescence, or physical deterioration. The sales comparison approach determines an asset is equal to the market price of an asset of comparable features such as design, location, size, construction, materials, use, capacity, specification, operational characteristics and other features or descriptions.

Income taxes

Income taxes includes federal, state, local and foreign taxes. Income taxes are accounted for using the asset and liability method. Deferred tax assets and liabilities are recognized for future tax consequences attributable to differences between financial statement carrying amounts of existing assets and liabilities and their respective tax basis and net operating loss and research and development ("R&D") tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the year in which those temporary differences are expected to be recovered or settled. Valuation allowances are recorded as appropriate to reduce deferred tax assets to the amount considered likely to be realized.

Deferred income tax effects of transactions reported in different periods for financial reporting and income tax return purposes are recognized under the asset and liability method of accounting for income taxes. This method gives consideration to the future tax consequences of the deferred income tax items and immediately recognizes changes in income tax laws in the year of enactment.

The Company's ability to realize deferred tax assets depends upon future taxable income as well as the limitations discussed below. For financial reporting purposes, a deferred tax asset must be reduced by a valuation allowance if it is more likely than not that some portion or all of the deferred tax assets will not be realized prior to expiration. The Company considers future taxable income and ongoing tax planning strategies in assessing the need for valuation allowances. In general, if the Company determines that it is more likely than not to realize more than the recorded amounts of net deferred tax assets in the future, the Company will reverse all or a portion of the valuation allowance established against its deferred tax assets, resulting in a decrease to income taxes in the period in which the determination is made. Likewise, if the Company determines that it is not more likely than not to realize all or part of the net deferred tax asset in the future, the Company will establish a valuation allowance against deferred tax assets, with an offsetting increase to income taxes, in the period in which the determination is made.

Under sections 382 and 383 of the Internal Revenue Code, if an ownership change occurs with respect to a "loss corporation", as defined therein, there are annual limitations on the amount of net operating losses and deductions that are available. The Company has recognized the portion of net operating losses and R&D tax credits acquired that will not be limited and are more likely than not to be realized.

Because tax laws are complex and subject to different interpretations, significant judgment is required. As a result, the Company makes certain estimates and assumptions, in (1) calculating the Company's income tax expense, deferred tax assets and deferred tax liabilities, (2) determining any valuation allowance recorded against deferred tax assets and (3) evaluating the amount of unrecognized tax benefits, as well as the interest and penalties related to such uncertain tax positions. The Company's estimates and assumptions may differ from tax benefits ultimately realized.

Asset Impairment Analysis

Goodwill and Indefinite-lived Intangible Assets

Goodwill represents the difference between the purchase price and the fair value of the identifiable tangible and intangible net assets when accounted for using the purchase method of accounting. Goodwill is not amortized but is reviewed for impairment. Goodwill is allocated to the Company's reporting units, which are components of our business for which discrete cash flow information is available one level below its operating segment. The Company evaluates goodwill and other indefinite-lived intangible assets for impairment annually as of October 1 and at interim if an event or other circumstance indicates that we may not recover the carrying value of the asset. If the Company believes that as a result of its qualitative assessment it is more likely than not that the fair value of a reporting unit or other indefinite-lived intangible asset is greater than its carrying amount, the quantitative impairment test is not required. If however it is determined that it is not more likely than not that the fair value of a reporting unit or other indefinite-lived intangible asset is greater than its carrying amount, a quantitative test is required.

The quantitative goodwill impairment test is performed using a one-step process. The process is to compare the fair value of a reporting unit with its carrying amount. If the fair value of a reporting unit exceeds its carrying amount, goodwill of the reporting unit is not impaired. If the carrying amount of a reporting unit exceeds its fair value, goodwill of the reporting unit is impaired and an impairment loss is recognized in an amount equal to that excess up to the total amount of goodwill included in the reporting unit.

When the Company has material indefinite lived intangible assets associated with in-process research and development ("IPR&D") a qualitative assessment is performed. If the qualitative assessment indicates that it is not more likely than not that the fair value of the indefinite lived intangible asset exceeds its carrying amount, the Company

compares the estimated fair value of the intangible with its carrying value. If the carrying value of the intangible asset exceeds its fair value, an impairment loss is recognized in an amount equal to that excess. Determining fair value requires the exercise of judgment about appropriate discount rates, perpetual growth rates and the amount and timing of expected future cash flows (see Note 5, "Intangible assets and goodwill).

Long-lived Assets

Long-lived assets such as intangible assets and property, plant and equipment are not required to be tested for impairment annually. Instead, they are tested for impairment whenever circumstances indicate that the carrying amount of the asset may not be recoverable, such as when the disposal of such assets is likely or there is an adverse change in the market involving the business employing the related assets. If an impairment analysis is required, the impairment test employed is based on whether the Company's intent is to hold the asset for continued use or to hold the asset for sale. If the intent is to hold the asset for continued use, the impairment test first requires a comparison of undiscounted future cash flows to the carrying value of the asset. If the carrying value of the asset exceeds the undiscounted cash flows, the asset would not be deemed to be recoverable. Impairment would then be measured as the excess of the asset's carrying value over its fair value. Fair value is typically determined by discounting the future cash flows associated with that asset. If the intent is to hold the asset for sale and certain other criteria are met, the impairment test involves comparing the asset's carrying value to its fair value less costs to sell. To the extent the carrying value is greater than the asset's fair value less costs to sell, an impairment loss is recognized in an amount equal to the difference. Significant judgments used for long-lived asset impairment assessments include identifying the appropriate asset groupings and primary assets within those groupings, determining whether events or circumstances indicate that the carrying amount of the asset may not be recoverable, determining the future cash flows for the assets involved and assumptions applied in determining fair value, which include, reasonable discount rates, growth rates, market risk premiums and other assumptions about the economic environment.

Contingent Consideration

In connection with the Company's acquisitions accounted for as business combinations, the Company records contingent consideration associated with sales-based royalties, sales-based milestones and development and regulatory milestones at fair value. The fair value model used to calculate these obligations is based on the income approach (a discounted cash flow model) that has been risk adjusted based on the probability of achievement of net sales and achievement of the milestones. The inputs the Company uses for determining the fair value of the contingent consideration associated with sales-based royalties, sales-based milestones and development and regulatory milestones are Level 3 fair value measurements. The Company re-evaluates the fair value on a quarterly basis. Changes in the fair value can result from adjustments to the discount rates and updates in the assumed timing of or achievement of net sales and/or the achievement of development and regulatory milestones. Any future increase or decrease in the fair value of the contingent consideration associated with sales-based royalties and sales-based milestones along with development and regulatory milestones are based on an assessment of the likelihood that the underlying net sales or milestones will be achieved.

The associated payments which will become due and payable for sales-based royalties and milestones result in a charge to cost of product sales in the period in which the increase is determined. Similarly, any future decrease in the fair value of contingent consideration associated with sales-based royalties and sales-based milestones will result in a reduction in cost of product sales. The changes in fair value for potential future sales-based royalties associated with product candidates in development will result in a charge to cost of product sales in the period in which the increase is determined.

The Company's acquisitions accounted for as asset acquisitions may also include contingent consideration payments to be made for sales-based royalties, sales-based milestones and development and regulatory milestones. The Company assesses whether such contingent consideration meets the definition of a derivative. Contingent consideration payments in an asset acquisition not required to be accounted for as derivatives are recognized when the contingency is resolved, and the consideration is paid or becomes payable. Contingent consideration payments required to be accounted for as derivatives are recorded at fair value on the date of the acquisition and are subsequently remeasured to fair value at each reporting date.

Leases

The Company has operating leases for corporate offices, R&D facilities and manufacturing facilities. The Company determines if an arrangement is a lease at inception. Operating leases with future minimum lease payments in excess of 12 months and total lease payments greater than $0.4 million are included in right-of-use (ROU) assets and liabilities. The Company has elected to record expense on a cash basis for leases with minimum lease payments of 12 months or less and/or total lease payments less $0.4 million.

ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. As most of the Company's leases do not provide an implicit rate, the Company uses an incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. The Company uses an implicit rate when readily determinable. At the beginning of a lease, the operating lease ROU asset also includes any concentrated lease payments expected to be paid and excludes lease incentives. The Company's lease ROU asset may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise those options.

Lease expense for lease payments is recognized on a straight-line basis over the lease term. The Company has lease agreements with lease and non-lease components, which are accounted for separately.

Revenue recognition

The Company recognizes revenue when the Company's customers obtain control of promised goods or services, in an amount that reflects the consideration which the Company expects to receive in exchange for those goods or services by analyzing the following five steps: (1) identify the contract with a customer(s); (2) identify the performance obligations in the contract; (3) determine the transaction price; (4) allocate the transaction price to the performance obligations in the contract; and (5) recognize revenue when (or as) the entity satisfies a performance obligation.

Multiple performance obligations

At contract inception, the Company assesses the products or services promised in a contract and identifies a performance obligation for each promise to transfer to the customer a product or service that is distinct, including evaluating whether the contract includes a customer option for additional goods or services which could represent a material right. A performance obligation is a promise in a contract to transfer a distinct product or service to a customer and is the unit of account under ASC 606. Contracts sometimes include more than one product, a lease, or options for customers to purchase additional products or services in the future for free or at a discount, which gives rise to separate performance obligations. For contracts with multiple performance obligations, the Company allocates the contract price to each performance obligation on a relative standalone selling price basis using the Company's best estimate of the standalone selling price of each distinct product or service in the contract. The primary method used to estimate standalone selling price is the price observed in standalone sales to customers, however when prices in standalone sales are not available the Company may use third-party pricing for similar products or services or estimate the standalone selling price. Allocation of the transaction price is determined at the contracts' inception.

Transaction price and variable consideration

Once the performance obligations in the contract have been identified, the Company estimates the transaction price of the contract. The estimate includes amounts that are fixed as well as those that can vary based on expected outcomes of the activities or contractual terms. The Company's variable consideration includes net profit received from sales of the Company's generic Nasal naloxone product, certain products sold on a net basis, cost-plus-fee contract terms and consideration transferred under its development contracts as consideration received can vary based on developmental progression of the product candidate. When a contract's transaction price includes variable consideration, the Company evaluates the variable consideration to determine whether the estimate needs to be constrained; therefore, the Company includes the variable consideration in the transaction price only to the extent that it is probable that a significant reversal of the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved. Variable consideration estimates are updated at each reporting date. There were no significant constraints or material changes to the Company's variable consideration estimates as of or during the year ended December 31, 2022.

Product sales

For our product sales, we recognize revenue at a point in time when the Company's performance obligations have been satisfied and control of the products transfer to the customer. To indicate the transfer of control the Company will have a present right to payment, legal title must have passed to the customer, and the customer must have the significant risks and rewards of ownership. This point in time depends on several factors, including delivery, transfer of legal title, transition of risk and rewards of the product to the customer and the Company's right to payment.

The Company's contracts for the sale of the Company's Government - MCM products include certain acceptance criteria before title passes to the customer. The primary customer for the Company's Government - MCM products and the primary source of funding for the development of its MCM product candidate portfolio is the USG. The USG contracts for the sale of the Company's Government - MCM products are normally multi-year contracts with annual options.

For the Company's commercial products, upon transfer of control of the goods the Company reflects estimates of the consideration that the Company expects. Prior to recognizing revenue, the Company makes estimates of the transaction price, including variable consideration that is subject to a constraint. Estimates of variable consideration include allowances for returns, specialty distributor fees, wholesaler fees, prompt payment discounts, government rebates, chargebacks and rebates under managed care plans.

Revenue is recognized to the extent that it is probable that a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with such variable consideration is subsequently resolved. Provisions for variable consideration revenues from sales of products are recorded at the net sales price. Calculating certain of these provisions involves estimates and judgments and the Company determines their expected value based on sales or invoice data, contractual terms, historical utilization rates, new information regarding changes in these programs' regulations and guidelines that would impact the amount of the actual rebates, the Company's expectations regarding future utilization rates for these programs and channel inventory data. These provisions reflect the Company's best estimate of the amount of consideration to which the Company is entitled based on the terms of the contract. The Company reassesses the Company's provisions for variable consideration at each reporting date.

CDMO services

The Company performs CDMO services for third parties. Under these contracts, activities can include drug substance and drug product manufacturing services for injectable and other sterile products, and development services such as pharmaceutical product process development, process design, technology transfer, manufacturing validations, laboratory analytical development support, aseptic filling, lyophilization, final packaging, stability studies, and suite-reservations. These contracts vary in duration, activities, and number of performance obligations. Performance obligations identified under these arrangements may include drug substance and/or drug product manufacturing, technology transfer activities, and suite-reservations.

Drug substance, drug product manufacturing, development services and technology transfer performance obligations are recognized as revenue over-time because the Company's performance does not create an asset with an alternative use and the Company has an enforceable right to payment for performance completed as work is performed. In drug product arrangements, the customer typically owns and supplies the active pharmaceutical ingredient (API), that is used in the manufacturing process; in drug substance arrangements, the customer provides certain seed material that is used in the manufacturing process. The transaction price generally contains both a fixed and variable component. The fixed component is stated in the agreement as a fixed price per unit with no contractual provision for a refund or price concession and the variable component generally results from pass-through costs that are billed at cost-plus over the life of the contract. The Company uses an input method to measure progress toward the satisfaction of the related performance obligations based on costs incurred as a percentage of total costs to complete which the Company believes best depicts the transfer of control of goods or services promised to its customers.

Suite reservations are classified as leases when the customer directs the use of the identified suite and obtains substantially all the economic benefits from the manufacturing capacity. If a customer reserves more than one suite, the allocation of contract value is based on relative selling price which varies due to size, location, capacity, production capability for drug product or drug substance, and the time of planned use. The associated revenue is recognized on a straight-line basis over the period of performance. For arrangements that contain both lease and non-lease components, consideration in the contract is allocated on a relative standalone selling price basis.

The Company's CDMO customer contracts generally include provisions entitling the Company to a termination penalty when the contract is terminated prior to the contract's nominal end date. The termination penalties in the customer contracts vary but are generally considered substantive for accounting purposes and create enforceable rights and obligations throughout the stated duration of the contract. The Company accounts for a contract cancellation as a contract

modification. The determination of the contract termination penalty is based on the terms stated in the related customer agreement. As of the modification date, the Company updates its estimate of the transaction price, subject to constraints, and recognizes the amount over the remaining performance period or measure of progress under the arrangement.

For contracts that contain lease components, the Company assesses the collectability of the lease payments. If the collectability of the lease payments is probable, the Company recognizes lease income over the term of the lease on a straight-line basis. If collectability is not deemed probable at any time during the term of the lease, the Company's lease income is limited to the lesser of (i) the lease payments that have been collected from the lessee, or the straight-line recognition of the contract value. If the collectability assessment changes to probable after the Company has determined collectability is not deemed probable, any difference between the lease income that would have been recognized if collectability had always been assessed as probable and the lease income recognized to date is recognized as a current-period adjustment to lease income. Changes to the collectability of operating leases are recorded as adjustments to lease income in the consolidated statements of operations in the period that they occur.

Contracts and grants

The Company generates contract and grant revenue primarily from cost-plus-fee contracts associated with development of certain product candidates. Revenues from reimbursable contracts are recognized as costs are incurred, generally based on allowable costs incurred during the period, plus any recognizable earned fee. The Company uses this input method to measure progress as the customer has access to the development research under these projects and benefits incrementally as R&D activities occur. When applicable, the Company considers fixed fees under cost-plus-fee contracts to be earned in proportion to the allowable costs incurred in performance of the contract, the cost-to-cost measure of progress. The Company analyzes costs for contracts and reimbursable grants to ensure reporting of revenues gross versus net is appropriate. The USG contracts for the development of the Company's MCM product candidates are normally multi-year contracts.

Research and development

The Company expenses R&D costs as incurred. The Company's R&D expenses consist primarily of:

- personnel-related expenses;
- fees to professional service providers for, among other things, analytical testing, independent monitoring or other administration of the Company's clinical trials and obtaining and evaluating data from the Company's clinical trials and non-clinical studies;
- costs of CDMO services for clinical trial material; and
- costs of materials intended for use and used in clinical trials and R&D.

Comprehensive income (loss)

Comprehensive income (loss) is comprised of net income (loss) and other changes in equity that are excluded from net income (loss). The Company includes translation gains and losses incurred when converting its subsidiaries' financial statements from their functional currency to the U.S. dollar in accumulated other comprehensive income (loss) as well as gains and losses on its pension benefit obligation and derivative instruments.

Translation and Remeasurement of Foreign Currencies

For our non-U.S. subsidiaries that transact in a functional currency other than the U.S. dollar, assets and liabilities are translated at current rates of exchange at the balance sheet date. Income and expense items are translated at the average foreign currency exchange rates for the period. Adjustments resulting from the translation of the financial statements of our foreign operations into U.S. dollars are excluded from the determination of net income (loss) and are recorded in accumulated other comprehensive income (loss), a separate component of equity. For subsidiaries where the functional currency of the assets and liabilities differ from the local currency, non-monetary assets and liabilities are remeasured at the rate of exchange in effect on the date assets were acquired while monetary assets and liabilities are remeasured at current rates of exchange as of the balance sheet date. Income and expense items are remeasured at the average foreign currency rates for the period. Remeasurement adjustments of these subsidiaries are included in other income (expense), net in our consolidated statements of operations.

Net income (loss) per common share

Basic net income (loss) per common share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted net income (loss) per common share is computed using

the treasury method by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period, adjusted for the potential dilutive effect of other securities if such securities were converted or exercised and are not anti-dilutive.

Treasury stock

When stock is acquired for purposes other than formal or constructive retirement, the purchase price of the acquired stock is recorded in a separate treasury stock account, which is separately reported as a reduction of equity.

When stock is retired or purchased for formal or constructive retirement, the purchase price is initially recorded as a reduction to the par value of the shares repurchased, with any excess purchase price over par value recorded as a reduction to additional paid-in capital related to the series of shares repurchased and any remainder excess purchase price recorded as a reduction to retained earnings. If the purchase price exceeds the amounts allocated to par value and additional paid-in capital related to the series of shares repurchased and retained earnings, the remainder is allocated to additional paid-in capital related to other series of shares.

To determine the cost of treasury stock that is either sold or reissued, the Company uses the last in, first out method. If the proceeds from the re-issuance of treasury stock are greater than the cost, the excess is recorded as additional paid-in capital. If the proceeds from re-issuance of treasury stock are less than the cost, the excess cost first reduces any additional paid-in capital arising from previous treasury stock transactions for that class of stock, and any additional excess is recorded as a reduction of retained earnings.

Accounting for stock-based compensation

The Company has one stock-based employee compensation plan, the Fourth Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan (the "Emergent Plan") under which the Company may grant various types of equity awards including stock options, restricted stock units and performance stock units. For all of our share-based awards, the Company recognizes forfeitures and compensation costs when they occur.

The terms and conditions of equity awards (such as price, vesting schedule, term and number of shares) under the Emergent Plan is determined by the compensation committee of the Company's board of directors, which administers the Emergent Plan. Each equity award granted under the Emergent Plan vests as specified in the relevant agreement with the award recipient and no option can be exercised after seven years from the date of grant. The Company records the estimated fair value of awards in expense on a straight-line basis over the requisite service period, which is generally the vesting period. Where awards are made with non-substantive vesting periods (for instance, where a portion of the award vests upon retirement eligibility), the Company estimates and recognizes expense based on the period from the grant date to the date the employee becomes retirement eligible.

The Company determines the fair value of restricted stock units using the closing market price of the Company's common stock on the day prior to the date of grant. The Company's performance stock units settle in the Company's stock. The fair value is determined on the date of the grant using the number of shares expected to be earned and the ending market value of the stock on the day prior to the grant date. The number of shares expected to vest is adjusted each reporting period by assessing the probability that the performance criteria will be met and the associated targeted payout level that is forecasted will be achieved.

The Company utilizes the Black-Scholes valuation model for estimating the fair value of all stock options granted. Set forth below is a discussion of the Company's methodology for developing each of the assumptions used:

- Expected dividend yield — the Company does not pay regular dividends on its common stock and does not anticipate paying any dividends in the foreseeable future.
- Expected volatility — a measure of the amount by which a financial variable, such as share price, has fluctuated (historical volatility) or is expected to fluctuate (implied volatility) during a period. The Company analyzed its own historical volatility to estimate expected volatility over the same period as the expected average life of the options.
- Risk-free interest rate — the range of U.S. Treasury rates with a term that most closely resembles the expected life of the option as of the date on which the option is granted.
- Expected average life of options — the period of time that options granted are expected to remain outstanding, based primarily on the Company's expectation of option exercise behavior subsequent to vesting of options.

Pension plans

The Company maintains defined benefit plans for employees in certain countries outside the U.S., including retirement benefit plans required by applicable local law. The plans are valued by independent actuaries using the projected unit credit method. The liabilities correspond to the projected benefit obligations of which the discounted net present value is calculated based on years of employment, expected salary increase, and pension adjustments. The Company reviews its actuarial assumptions on an annual basis and makes modifications to the assumptions based on current rates and trends. Actuarial gains and losses are deferred in accumulated other comprehensive income (loss), net of tax and are amortized over the remaining service attribution periods of the employees under the corridor method. Differences between the expected long-term return on plan assets and the actual annual return are amortized to net periodic benefit cost over the estimated remaining life as a component of selling, general and administrative expenses in the consolidated statements of operations.

Derivative instruments and hedging activities

The Company is exposed to certain risks arising from both its business operations and economic conditions. The Company principally manages its exposures to a wide variety of business and operational risks through management of its core business activities. The Company manages economic risks, including interest rate, liquidity, and credit risk primarily by managing the amount, sources, and duration of its assets and liabilities and the use of derivative financial instruments. Specifically, the Company has entered into interest rate swaps to manage exposures that arise from the Company's payments of variable interest rate debt under its senior secured credit agreements.

The Company's interest rate swaps qualify for hedge accounting as cash flow hedges. All derivatives are recorded on the balance sheet at fair value. Hedge accounting provides for the matching of the timing of gain or loss recognition on these interest rate swaps with the recognition of the changes in interest expense on the Company's variable rate debt. For derivatives designated as cash flow hedges of interest rate risk, the gain or loss on the derivative is recorded in accumulated other comprehensive income (loss) and subsequently reclassified into interest expense in the same period during which the hedged transaction affects earnings. Amounts reported in accumulated other comprehensive income (loss) related to derivatives will be reclassified to interest expense as interest payments are made on the Company’s variable-rate debt. The cash flows from the designated interest rate swaps are classified as a component of operating cash flows, similar to interest expense.

The valuation of the interest rate swaps is determined using widely accepted valuation techniques, including discounted cash flow analysis on the expected cash flows of each interest rate swap. This analysis reflects the contractual terms of the interest rate swaps, including the period to maturity, and uses observable market-based inputs, including interest rate curves and implied volatilities. The fair values of interest rate swaps are determined using the market standard methodology of netting the discounted future fixed cash payments (or receipts) and the discounted expected variable cash receipts (or payments). The variable cash payments (or receipts) are based on an expectation of future interest rates (forward curves) derived from observable market interest rate curves. To comply with the provisions of ASC 820, Fair Value Measurement, the Company incorporates credit valuation adjustments in the fair value measurements to appropriately reflect both its own nonperformance risk and the respective counterparty’s nonperformance risk. These credit valuation adjustments were concluded to not be significant inputs for the fair value calculations for the periods presented. In adjusting the fair value of the Company's derivative contracts for the effect of nonperformance risk, it has considered the impact of netting and any applicable credit enhancements, such as the posting of collateral, thresholds, mutual puts and guarantees. The valuation of interest rate swaps fall into Level 2 in the fair value hierarchy. See Note 7, "Derivative instruments" for further details on the interest rate swaps.

New Accounting Standards

Recently Adopted Accounting Standards

Accounting Standards Update ("ASU") 2020-04 (ASU 2020-04), Reference Rate Reform (Topic 848): Facilitation of the Effects of Reference Rate Reform on Financial Reporting

In March 2020, the Financial Accounting Standards Board issued ASU 2020-04, which was further amended in January 2021. ASU 2020-04 provides relief for impacted areas as it relates to impending reference rate reform. It contains optional expedients and exceptions to debt arrangements, contracts, hedging relationships, and other areas or transactions that are impacted by reference rate reform. This guidance is effective upon issuance for all entities and elections of certain optional expedients are required to apply the provisions of the guidance. The Company adopted ASU 2020-04 during the year ended December 31, 2022 with no material impact to our consolidated financial statements.

3. Inventories, net

Inventories, net consist of the following:

	December 31,	
	2022	2021
Raw materials and supplies	$ 143.4	$ 217.5
Work-in-process	116.2	95.8
Finished goods	92.2	37.5
Total inventories, net [1]	$ 351.8	$ 350.8

[1] During the year ended December 31, 2022, the Company acquired certain assets through an asset acquisition, the Transaction, and the related inventories of $28.6 million were included in the Company's inventories balances as of December 31, 2022.

Inventories, net is stated at the lower of cost or net realizable value.

During the year ended December 31, 2021, the Company recorded inventory write-offs related to its Bayview facility of $41.5 million and the charge was reflected as a component of cost of CDMO services on the Company's consolidated statements of operations. For additional information related the termination of the manufacturing services agreement (the “Agreement”) with Janssen Pharmaceuticals, Inc. (“Janssen”) as of December 31, 2022, refer to Note 11 "Revenue recognition".

4. Property, plant and equipment, net

Property, plant and equipment, net consists of the following:

	December 31,	
	2022	2021
Land and improvements	$ 54.9	$ 52.1
Buildings, building improvements and leasehold improvements	327.9	269.7
Furniture and equipment	567.5	513.5
Software	65.6	60.7
Construction-in-progress	185.5	223.2
Property, plant and equipment, gross	1,201.4	1,119.2
Less: Accumulated depreciation and amortization	(383.8)	(319.1)
Total property, plant and equipment, net	$ 817.6	$ 800.1

For the years ended December 31, 2022 and 2021, construction-in-progress primarily includes costs incurred related to construction to advance the Company's CDMO capabilities.

Property, plant and equipment, net is stated at cost, less accumulated depreciation and amortization. During the year ended December 31, 2022, the Company recorded accelerated depreciation of $12.7 million reflecting a shortening of the useful life of certain property, plant and equipment which were to be used in the manufacturing process to fulfill the Agreement with Janssen. For additional information related to the termination of the Agreement, refer to Note 11 "Revenue recognition".

Depreciation and amortization expense associated with property, plant and equipment was $83.4 million, $62.2 million and $50.1 million for the years ended December 31, 2022, 2021, and 2020, respectively.

5. Intangible assets and goodwill

The Company's intangible assets consist of products acquired via business combinations or asset acquisitions. Components of the Company’s intangible assets, excluding goodwill, consisted of the following:

	Weighted Average Useful Life in Years	December 31, 2022 Gross Carrying Amount	December 31, 2022 Accumulated Amortization	December 31, 2022 Net Carrying Amount	December 31, 2021 Gross Carrying Amount	December 31, 2021 Accumulated Amortization	December 31, 2021 Net Carrying Amount
Products [1][2]	14.4	$ 982.1	$ 253.3	$ 728.8	$ 798.0	$ 193.5	$ 604.5
Customer relationships	0.0	28.6	28.6	—	28.6	28.6	—
CDMO	0.0	5.5	5.5	—	5.5	5.4	0.1
Total intangible assets	14.4	$ 1,016.2	$ 287.4	$ 728.8	$ 832.1	$ 227.5	$ 604.6

[1] During the year ended December 31, 2022, the Company acquired certain assets through asset acquisitions, and the related intangible assets were assigned to the "Products" asset type, of which $156.9 million was related to the Transaction.

[2] During the year ended December 31, 2022, the Company acquired certain assets through a royalty settlement, and the related intangible assets of $21.8 million were assigned to the "Products" asset type.

For the years ended December 31, 2022, 2021, and 2020, the Company recorded amortization expense for intangible assets of $59.9 million, $58.5 million and $59.8 million, respectively, which is included in the amortization of intangible assets in the consolidated statements of operations.

The Company estimates its future amortization expense for our intangible assets as follows:

Year	As of December 31, 2022
2023	$ 71.5
2024	71.5
2025	71.5
2026	70.2
2027	67.0
Thereafter	377.1
Total remaining amortization	$ 728.8

The table below summarizes the changes in the carrying amount of goodwill by reportable segment:

	Products [1]	Services [2]	Total
Balance at December 31, 2020	$ 260.0	$ 6.7	$ 266.7
Goodwill impairment	(41.7)	—	(41.7)
Foreign currency translation adjustment	(0.1)	—	(0.1)
Balance at December 31, 2021	$ 218.2	$ 6.7	$ 224.9
Goodwill impairment	—	(6.7)	(6.7)
Foreign currency translation adjustment	—	—	—
Balance at December 31, 2022	$ 218.2	$ —	$ 218.2

[1] Amounts for the Company's Products segment include gross carrying values of $259.9 million as of December 31, 2022 and 2021, and $260.0 million as of December 31, 2020, and accumulated impairment losses of $41.7 million representing the aggregate impairment charges for the years ended December 31, 2022, 2021 and 2020.

[2] Amounts for the Company's Services segment include gross carrying values of $6.7 million as of December 31, 2022, 2021, and 2020, and accumulated impairment losses of $6.7 million representing the aggregate impairment charges for the year ended December 31, 2022.

As a result of the Company's annual goodwill impairment test on October 1, 2022 the Company recorded a $6.7 million non-cash goodwill impairment charge included in "Goodwill impairment" in the Statements of Operations during the year ended December 31, 2022 in the CDMO - Services reporting unit within the Services segment. The CDMO - Services reporting unit and Services segment had no remaining goodwill balance as of December 31, 2022. The goodwill impairment charge resulted from a reduction in the estimated fair value of the CDMO-Services reporting unit due to changes to the long-term operating plan that reflected lower expectations for growth and profitability than previous expectations. The Company used a quantitative assessment, utilizing a income based (discounted cash flows) approach, Level 3 non-recurring fair value measurement, for our goodwill impairment testing for all of our reporting units in 2022. Outside of our CDMO - Services reporting unit, the assessments completed for all other reporting units during the year ended December 31, 2022 indicated no impairment.

On October 1, 2021, the Company reorganized its lines of business resulting in a change in the composition of two of its reporting units and performed its annual impairment testing using quantitative tests to determine fair values of the reporting units both before and after the reorganization of the lines of business and its reporting units. Using both a market based (comparable company multiple) and income based (discounted cash flows) approach, each a Level 3 non-recurring fair value measurement, the Company determined that there was a goodwill impairment of $41.7 million included in "Goodwill impairment" in the Statements of Operations in the Commercial products reporting unit within our Products segment. The Company used a qualitative assessment for our goodwill impairment testing for all other reporting units in 2021. The assessments completed for all other reporting units during the year ended December 31, 2021 indicated no impairment.

6. Fair value measurements

The table below presents information about the Company's assets and liabilities that are regularly measured and carried at fair value and indicate the level within the fair value hierarchy of the valuation techniques we utilized to determine fair value:

	December 31, 2022				December 31, 2021			
	Total	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3
Assets:								
Money market accounts	$ 320.8	$ 320.8	$ —	$ —	$ 152.4	$ 152.4	$ —	$ —
Time deposits	170.7	—	170.7	—	200.0	—	200.0	—
Derivative instruments	$ 8.5	$ —	$ 8.5	$ —	$ —	$ —	$ —	$ —
Total	$ 500.0	$ 320.8	$ 179.2	$ —	$ 352.4	$ 152.4	$ 200.0	$ —
Liabilities:								
Contingent consideration	$ 6.8	$ —	$ —	$ 6.8	$ 37.2	$ —	$ —	$ 37.2
Derivative instruments	—	—	—	—	6.1	—	6.1	—
Total	$ 6.8	$ —	$ —	$ 6.8	$ 43.3	$ —	$ 6.1	$ 37.2

Contingent consideration

Contingent consideration liabilities associated with business combinations are measured at fair value. These liabilities represent an obligation of the Company to transfer additional assets to the selling shareholders and owners if future events occur or conditions are met. These liabilities associated with business combinations are measured at fair value at inception and at each subsequent reporting date. The changes in the fair value are primarily due to the expected amount and timing of future net sales, which are inputs that have no observable market. Any changes in fair value for the contingent consideration liabilities related to the Company's products are classified in the Company's statement of operations as cost of product sales. Any changes in fair value for the contingent consideration liabilities related to the Company's product candidates are recorded in R&D expense for regulatory and development milestones.

The following table is a reconciliation of the beginning and ending balance of the contingent consideration liabilities measured at fair value during the years ended December 31, 2022, 2021 and 2020.

	Contingent Consideration
Balance at December 31, 2019	$ 29.2
Expense included in earnings	31.7
Settlements	(2.8)
Balance at December 31, 2020	$ 58.1
Expense included in earnings	2.9
Settlements	(23.8)
Balance at December 31, 2021	$ 37.2
Expense included in earnings	2.6
Settlements	(33.0)
Balance at December 31, 2022	$ 6.8

As of December 31, 2022 and 2021, the current portion of the contingent consideration liability was $3.1 million and $32.7 million, respectively, and was included in "other current liabilities" on the consolidated balance sheets. The non-current portion of the contingent consideration liability is included in "other liabilities" on the consolidated balance sheets.

The recurring Level 3 fair value measurements for the Company's contingent consideration liability include the following significant unobservable inputs:

Contingent Consideration Liability	Fair Value as of December 31, 2022	Valuation Technique	Unobservable Input	Range
Royalty based	$6.8 million	Discounted cash flow	Discount rate	9.9%
			Probability of payment	25.0% - 50.0%
			Projected year of payment	2023 - 2028

Non-Variable Rate Debt

As of December 31, 2022 and 2021, the fair value of the Company's 3.875% Senior Unsecured Notes was $225.1 million and $433.3 million, respectively. The fair value was determined through market sources, which are Level 2 inputs and directly observable. The carrying amounts of the Company's other long-term variable interest rate debt arrangements approximate their fair values (see Note 8, "Debt").

Non-recurring fair value measurements

Separate disclosure is required for assets and liabilities measured at fair value on a recurring basis from those measured at fair value on a non-recurring basis. As of December 31, 2022 and December 31, 2021, other than those outlined in Note 5 "Intangible assets and goodwill", there were no material assets or liabilities measured at fair value on a non-recurring basis.

7. Derivative instruments and hedging activities

Risk management objective of using derivatives

The Company is exposed to certain risks arising from both its business operations and economic conditions. The Company principally manages its exposures to a wide variety of business and operational risks through management of its core business activities. The Company manages economic risks, including interest rate, liquidity and credit risk primarily by managing the amount, sources and duration of its assets and liabilities and the use of derivative financial instruments. Specifically, the Company has entered into interest rate swaps to manage exposures that arise from payments of variable interest rate debt associated with the Company's senior secured credit agreements.

If current fair values of designated interest rate swaps remained static over the next twelve months, the Company would reclassify $8.5 million of net deferred gains from accumulated other comprehensive income (loss) to the statement of operations over the next twelve month period. All outstanding cash flow hedges mature in October 2023.

As of December 31, 2022, the Company had the following outstanding interest rate swap derivatives that were designated as cash flow hedges of interest rate risk:

	Number of Instruments	Notional amount
Interest Rate Swaps	7	$350.0

The table below presents the fair value of the Company's derivative financial instruments designated as hedges as well as their classification on the balance sheet.

	Fair Value of Asset Derivatives			Fair Value of Liability Derivatives		
		December 31,			December 31	
	Balance Sheet Location	2022	2021	Balance Sheet Location	2022	2021
Interest Rate Swaps	Other Current Assets	$ 8.5	$ —	Other Current Liabilities	$ —	$ 4.5
	Other Assets	$ —	$ —	Other Liabilities	$ —	$ 1.6

The valuation of the interest rate swaps is determined using widely accepted valuation techniques, including discounted cash flow analysis on the expected cash flows of each interest rate swap. This analysis reflects the contractual terms of the interest rate swaps, including the period to maturity, and uses observable market-based inputs, including interest rate curves and implied volatilities. The fair values of interest rate swaps are determined using the market standard methodology of netting the discounted future fixed cash payments (or receipts) and the discounted expected variable cash receipts (or payments). The variable cash payments (or receipts) are based on an expectation of future interest rates (forward curves) derived from observable market interest rate curves. We incorporate credit valuation adjustments in the fair value measurements to appropriately reflect both our own nonperformance risk and the respective counterparty's nonperformance risk. These credit valuation adjustments were not significant inputs for the fair value calculations for the periods presented. In adjusting the fair value of our derivative contracts for the effect of nonperformance risk, we have considered the impact of netting and any applicable credit enhancements, such as the posting of collateral, thresholds, mutual puts and guarantees. The valuation of interest rate swaps fall into Level 2 in the fair value hierarchy.

The table below presents the effect of cash flow hedge accounting on accumulated other comprehensive income (loss):

	Cumulative Amount of Gain/(Loss) Recognized in OCI on Derivatives		Location of Loss Reclassified from Accumulated OCI(L) into Income (Loss)	Amount of Loss Reclassified from Accumulated OCI(L) into Income (Loss)	
	December 31,			Year Ended December 31,	
	2022	2021		2022	2021
Interest Rate Swaps	$ 8.5	$ (6.1)	Interest expense	$ (0.1)	$ (5.8)

8. Debt

The components of debt are as follows:

	December 31,	
	2022	2021
Senior secured credit agreement - Term loan due 2023	$ 362.8	$ 396.6
Senior secured credit agreement - Revolver loan due 2023	598.0	—
3.875% Senior Unsecured Notes due 2028	450.0	450.0
Other	3.0	3.0
Total debt	$ 1,413.8	$ 849.6
Current portion of long-term debt, net of debt issuance costs	(957.3)	(31.6)
Unamortized debt issuance costs	(8.0)	(8.5)
Non-current portion of debt	$ 448.5	$ 809.4

As of December 31, 2022 there was a $598.0 million outstanding revolver loan balance. There was no outstanding revolver loan balance as of December 31, 2021. During the year ended December 31, 2022, the Company reclassified the debt issuance costs associated with the revolver loan to a contra account to directly offset the loan balance in other current liabilities on the Company's consolidated balance sheets. As of December 31, 2022, the Company had approximately $1.3 million debt issuance costs associated with the revolver loan that were classified as an offset to other current liabilities. Prior to 2022, the debt issuance costs associated with the revolver load were included in other current assets and other assets on the Company's consolidated balance sheets. As of December 31, 2021, the Company had approximately $2.0 million and $1.6 million of debt issuance costs associated with the revolver loan that were classified as other current assets and other assets, respectively.

3.875% Senior Unsecured Notes due 2028

On August 7, 2020, the Company completed its offering of $450.0 million aggregate principal amount of 3.875% Senior Unsecured Notes due 2028 (the "Senior Unsecured Notes") of which the majority of the net proceeds were used to pay down the Revolving Credit Facility (as defined below). Interest on the Senior Unsecured Notes is payable on February 15th and August 15th of each year until maturity, beginning on February 15, 2021. The Senior Unsecured Notes will mature on August 15, 2028.

On or after August 15, 2023, the Company may redeem the Senior Unsecured Notes, in whole or in part, at the redemption prices set forth in the related Indenture, plus accrued and unpaid interest. Prior to August 15, 2023 the Company may redeem all or a portion of the Senior Unsecured Notes at a redemption price equal to 100% of the principal amount of the Senior Unsecured Notes plus a “make-whole” premium and accrued and unpaid interest. Prior to August 15, 2023, the Company may redeem up to 40% of the aggregate principal amount of the Senior Unsecured Notes using the net cash proceeds of certain equity offerings at the redemption price set forth in the related Indenture. Upon the occurrence of a change of control, the Company must offer to repurchase the Senior Unsecured Notes at a purchase price of 101% of the principal amount of such Senior Unsecured Notes plus accrued and unpaid interest.

Negative covenants in the Indenture governing the Senior Unsecured Notes, among other things, limit the ability of the Company to incur indebtedness and liens, dispose of assets, make investments, enter into certain merger or consolidation transactions and make restricted payments.

Senior Secured Credit Agreement

Also on August 7, 2020, the Company entered into a Second Amendment (the "Second Credit Agreement Amendment") to its senior secured credit agreement, dated October 15, 2018, with multiple lending institutions relating to the Company’s senior secured credit facilities (the Credit Agreement, and as amended, the Amended Credit Agreement), consisting of Revolving Credit Facility and Term Loan Facility, and together with the Revolving Credit Facility, the Senior Secured Credit Facilities. The Second Credit Agreement Amendment amended, among other things, the definition of incremental facilities limit, the consolidated net leverage ratio financial covenant by increasing the maximum level, increased the permissible applicable margins based on the Company’s consolidated net leverage ratio and increased the commitment fee that the Company is required to pay in respect of the average daily unused commitments under the Revolving Credit Facility, depending on the Company’s consolidated net leverage ratio.

The Amended Credit Agreement includes (i) a Revolving Credit Facility of $600.0 million with a maturity date of October 13, 2023, and (ii) a Term Loan Facility with a principal amount of $450.0 million. The Company may request incremental term loan facilities or increases in the Revolving Credit Facility (each an Incremental Loan) as long as certain requirements involving our net leverage ratio will be maintained on a pro forma basis. Borrowings under the Revolving Credit Facility and the Term Loan Facility bear interest at a rate per annum equal to (a) a eurocurrency rate plus a margin ranging from 1.3% to 2.3% per annum, depending on the Company's consolidated net leverage ratio or (b) a base rate (which is the highest of the prime rate, the federal funds rate plus 0.5%, and a eurocurrency rate for an interest period of one month plus 1.0% plus a margin ranging from 0.3% to 1.3%, depending on the Company's consolidated net leverage ratio. The Company is required to make quarterly payments on the last business day of each calendar quarter under the Amended Credit Agreement for accrued and unpaid interest on the outstanding principal balance, based on the above interest rates. In addition, the Company is required to pay commitment fees ranging from 0.2% to 0.4% per annum, depending on the Company's consolidated net leverage ratio, for the average daily unused commitments under the Revolving Credit Facility. The Company is to repay the outstanding principal amount of the Term Loan Facility in quarterly installments on the last business day of each calendar quarter based on an annual percentage equal to 2.5% of the original principal amount of the Term Loan Facility during each of the first two years of the Term Loan Facility, 5.0% of the original principal amount of the Term Loan Facility during the third year of the Term Loan Facility and 7.5% of the original principal amount of the Term Loan Facility during each year of the remainder of the term of the Term Loan Facility until the maturity date of the Term Loan Facility, at which time the entire unpaid principal balance of the Term Loan Facility will be due and payable. The Company

has the right to prepay the Term Loan Facility without premium or penalty. The Revolving Credit Facility and the Term Loan Facility mature on October 13, 2023.

The Amended Credit Agreement also requires mandatory prepayments of the Term Loan Facility in the event the Company or its subsidiaries (a) incur indebtedness not otherwise permitted under the Amended Credit Agreement or (b) receive cash proceeds in excess of $100.0 million during the term of the Credit Agreement from certain dispositions of property or from casualty events involving their property, subject to certain reinvestment rights. The financial covenants under the Amended Credit Agreement currently require the quarterly presentation of a minimum consolidated 12-month rolling debt service coverage ratio of 2.5 to 1.0, and a maximum consolidated net leverage ratio of 4.5 to 1.0 (subject to an increase to 5.0 to 1.0 for an applicable four quarter period, at the election of the Company, in connection with a permitted acquisition having an aggregate consideration in excess of $75.0 million). Negative covenants in the Amended Credit Agreement, among other things, limit the ability of the Company to incur indebtedness and liens, dispose of assets, make investments, enter into certain merger or consolidation transactions and make restricted payments.

On February 14, 2023, the Company entered into a Consent, Limited Waiver, and Third Amendment to the Amended and Restated Credit Agreement relating to the Senior Secured Credit Facilities. Pursuant to the Third Credit Agreement Amendment, the requisite lenders consented to our sale of our travel health business to Bavarian Nordic substantially in accordance with the terms of the Sale Agreement. The proceeds from the transaction will be deposited into a cash collateral account with the Administrative Agent and will, unless otherwise agreed to by the Company and the requisite lenders, be used to repay the outstanding Term Loan Facility on the expiration of the Limited Waiver (as described below). We currently expect the transaction to close in the second quarter of 2023, but we can provide no assurance that the transaction will close prior to the October 2023 maturity of the Term Loan Facility, or at all.

Pursuant to the Third Credit Agreement Amendment the requisite lenders have agreed to a limited waiver of any defaults or events of default that result from (a) any violation of the financial covenants set forth in the Senior Secured Credit Facilities with respect to the fiscal quarters ending December 31, 2022 and March 31, 2023 and (b) the going concern qualification or exception contained in the audited financial statements for the fiscal year ending December 31, 2022. This limited waiver will expire on the earlier to occur of (i) any other event of default and (ii) April 17, 2023. During this period the Company is working with lenders under the Senior Secured Credit Facilities in connection with replacing such facilities before their October 2023 maturity with revised terms and conditions. The Company does not expect to be in compliance with debt covenants in future periods without additional sources of liquidity or future amendments to the Credit Agreement. See Footnote 2 "Summary of significant accounting policies" for Going Concern considerations related to noncompliance with our debt covenants and the limited waiver.

Debt Maturity

Future debt payments of long-term indebtedness are as follows:

Year	As of December 31, 2022
2023	$ 961.5
2024	0.3
2025	—
2026	2.0
2027	—
Thereafter	450.0
Total debt	$ 1,413.8

9. Stockholders' equity

Preferred stock

The Company is authorized to issue up to 15.0 million shares of preferred stock, $0.001 par value per share ("Preferred Stock"). Any Preferred Stock issued may have dividend rights, voting rights, conversion privileges, redemption characteristics, and sinking fund requirements as approved by the Company's board of directors.

Common stock

The Company currently has one class of common stock, $0.001 par value per share common stock ("Common Stock"), authorized and outstanding. The Company is authorized to issue up to 200.0 million shares of Common Stock. Holders of Common Stock are entitled to one vote for each share of Common Stock held on all matters, except as may be provided by law.

2021 Stock Repurchase program

On November 11, 2021, the Company announced that its Board of Directors authorized a stock repurchase program of up to an aggregate of $250.0 million of Common Stock (the "Share Repurchase Program"). The Share Repurchase Program expired on November 11, 2022. The Company utilized $187.9 million to purchase 4.4 million shares as of the program expiration date. The Share Repurchase Program did not obligate the Company to acquire any specific number of shares. Repurchased shares are available for use in connection with our stock plans and for other corporate purposes.

The following table details our stock repurchases under the Share Repurchase Program:

	Year Ended December 31,	
	2022	2021
Shares of common stock repurchased	1.8	2.6
Average price paid per share	$ 42.36	$ 42.67
Total cost	$ 75.5	$ 112.6

Accounting for share-based compensation

The Company has one share-based employee compensation plan, the Emergent Plan, which includes stock options and performance and restricted stock units.

As of December 31, 2022, an aggregate of 25.4 million shares of common stock were authorized for issuance under the Emergent Plan, of which a total of approximately 2.9 million shares of common stock remain available for future awards to be made to plan participants. The exercise price of each option must be not less than 100% of the fair market value of the shares underlying such option on the date of grant. Options granted under the Emergent Plan have a contractual life of seven years.

The Company utilizes the Black-Scholes valuation model for estimating the fair value of all stock options granted. Set forth below are the assumptions used in valuing the stock options granted:

	Year Ended December 31,		
	2022	2021	2020
Expected dividend yield	0 %	0 %	0 %
Expected volatility	54%-62%	47-48%	39-48%
Risk-free interest rate	1.54%-4.31%	0.43-0.94%	0.27-1.42%
Expected average life of options	4.5 years	4.5 years	4.5 years

Stock options, restricted stock units and performance stock units

The following is a summary of stock option award activity under the Emergent Plan:

	Number of Shares	Weighted-Average Exercise Price	Weighted Average Remaining Contractual Term (in Years)	Aggregate Intrinsic Value
Stock options outstanding at December 31, 2021	1.2	$ 60.83		$ 3.0
Stock options granted	0.7	$ 39.11		
Stock options exercised	—	$ 27.71		
Stock options forfeited	(0.2)	$ 64.66		
Stock options outstanding at December 31, 2022	1.7	$ 51.74	4.1	$ —
Stock options exercisable at December 31, 2022	0.8	$ 54.14	2.3	$ —

Cash received from option exercises for the years ended December 31, 2022, 2021 and 2020 was $0.5 million, $10.4 million and $27.6 million, respectively.

The weighted average grant date fair value of options granted during the years ended December 31, 2022, 2021, and 2020 was $17.85, $35.16 and $21.69 per share, respectively. The total intrinsic value of options exercised during the years ended December 31, 2022, 2021, and 2020 was $0.3 million, $15.7 million and $38.2 million, respectively. As of December 31, 2022, there was $12.0 million of unrecognized compensation cost related to stock options.

The following is a summary of performance stock unit and restricted stock unit award activity under the Emergent Plan:

	Number of Shares	Weighted-Average Grant Date Fair Value	Aggregate Intrinsic Value
Stock awards outstanding at December 31, 2021	1.1	$ 70.82	$ 47.6
Stock awards granted [(1)]	1.9	$ 34.49	
Stock awards released	(0.5)	$ 67.48	
Stock awards forfeited [(1)]	(0.3)	$ 55.46	
Stock awards outstanding at December 31, 2022	2.2	$ 42.30	$ 25.8

[(1)] Performance stock units granted and forfeited during the year ended December 31, 2022 are included at the target payout percentage, or 100%, of shares granted.

The total fair value of restricted stock unit awards released during the years ended December 31, 2022, 2021 and 2020 was $30.9 million, $26.9 million and $34.1 million, respectively. As of December 31, 2022, there was $54.5 million of unrecognized compensation cost related to unvested restricted stock units. That cost is expected to be recognized ratable over a weighted average period of 1.9 years.

Performance stock units represent common stock potentially issuable in the future, subject to achievement of performance conditions. Our current outstanding performance stock units vest based on certain financial metrics over the applicable performance period. The vesting and payout range for our performance stock units is typically between 50% and up to 150% of the target number of shares granted at the end of a three-year performance period. The total fair value of performance unit awards released during the years ended December 31, 2022, 2021 and 2020 was $2.5 million, $3.8 million and $1.2 million, respectively. As of December 31, 2022, there was $5.3 million of unrecognized compensation cost related to unvested performance stock units. That cost is expected to be recognized ratable over a weighted average period of 1.9 years.

Share-based Compensation Expense

Share-based compensation expense was recorded in the following financial statement line items:

	Year Ended December 31,		
	2022	2021	2020
Cost of product sales	$ 7.3	$ 6.4	$ 8.9
Cost of CDMO services	1.8	1.1	3.5
Research and development	5.4	5.0	8.4
Selling, general and administrative	30.6	29.9	30.2
Total share-based compensation expense	$ 45.1	$ 42.4	$ 51.0

Accumulated other comprehensive income (loss), net of tax

The following table includes changes in accumulated other comprehensive income (loss), net of tax by component:

	Defined Benefit Pension Plan	Derivative Instruments	Foreign Currency Translation Adjustments	Total
Balance at December 31, 2020	$ (7.7)	$ (11.0)	$ (6.6)	$ (25.3)
Other comprehensive income (loss) before reclassifications	4.3	0.7	(1.0)	4.0
Amounts reclassified from accumulated other comprehensive income (loss)	(0.6)	5.8	—	5.2
Net current period other comprehensive income (loss)	3.7	6.5	(1.0)	9.2
Balance at December 31, 2021	$ (4.0)	$ (4.5)	$ (7.6)	$ (16.1)
Other comprehensive income before reclassifications	8.7	10.8	1.0	20.5
Amounts reclassified from accumulated other comprehensive income (loss)	(1.2)	(0.1)	—	(1.3)
Net current period other comprehensive income	7.5	10.7	1.0	19.2
Balance at December 31, 2022	$ 3.5	$ 6.2	$ (6.6)	$ 3.1

The tables below present the tax effects related to each component of other comprehensive income (loss):

	December 31, 2022			December 31, 2021			December 31, 2020		
	Pretax	Tax Benefit (Expense)	Net of tax	Pretax	Tax Benefit (Expense)	Net of tax	Pretax	Tax Benefit (Expense)	Net of tax
Defined benefit pension plan	$ 8.7	$ (1.2)	$ 7.5	$ 4.3	$ (0.6)	$ 3.7	$ (5.0)	$ 0.7	$ (4.3)
Derivative instruments	14.6	(3.9)	10.7	8.9	(2.4)	6.5	(13.0)	3.6	(9.4)
Foreign currency translation adjustments	0.6	0.4	1.0	(1.2)	0.2	(1.0)	(1.8)	0.1	(1.7)
Total adjustments	$ 23.9	$ (4.7)	$ 19.2	$ 12.0	$ (2.8)	$ 9.2	$ (19.8)	$ 4.4	$ (15.4)

10. Net income (loss) per common share

The following table presents the calculation of basic and diluted net income (loss) per common share:

	Year Ended December 31,		
	2022	2021	2020
Numerator:			
Net income (loss)	$ (223.8)	$ 230.9	$ 305.1
Denominator:			
Weighted-average number of shares-basic	50.1	53.5	52.7
Dilutive effect of employee incentive plans	—	0.6	1.1
Weighted-average number of shares-diluted	50.1	54.1	53.8
Net income (loss) per common share - basic	$ (4.47)	$ 4.32	$ 5.79
Net income (loss) per common share - diluted	$ (4.47)	$ 4.27	$ 5.67

Basic net income (loss) per common share is computed by dividing net income (loss) by the weighted average number of shares of common stock outstanding during the period. Diluted net income (loss) per common share is computed using the treasury method by dividing net income by the weighted average number of shares of common stock outstanding during the period, adjusted for the potential dilutive effect of other securities if such securities were converted or exercised and are not anti-dilutive. No adjustment for the potential dilutive effect of dilutive securities is reported for the year ended December 31, 2022 as the effect would have been anti-dilutive due to the Company's net loss.

The following table presents the share-based awards that are not considered in the diluted net income (loss) per common share calculation generally because the exercise price of the awards was greater than the average per share closing price during the year ending December 31, 2022, 2021 and 2020. In certain instances, awards may be anti-dilutive even if the average market price exceeds the exercise price when the sum of the assumed proceeds exceeds the difference between the market price and the exercise price.

	Year Ended December 31,		
	2022	2021	2020
Anti-dilutive stock awards	2.8	1.0	—

11. Revenue recognition

The Company operates in two business segments (see Note 16, "Segment information"). The Company's revenues disaggregated by the major sources were as follows:

	Year Ended December 31,								
	2022			2021			2020		
	USG	Non-USG	Total	USG	Non-USG	Total	USG	Non-USG	Total
Product sales	$ 445.4	$ 520.8	$ 966.2	$ 530.0	$ 493.9	$ 1,023.9	$ 626.0	$ 363.8	$ 989.8
CDMO:									
Services	—	108.4	108.4	—	334.9	334.9	—	166.7	166.7
Leases	—	4.9	4.9	237.6	62.1	299.7	253.3	30.5	283.8
Total CDMO	—	113.3	113.3	237.6	397.0	634.6	253.3	197.2	450.5
Contracts and grants	37.2	4.2	41.4	130.2	4.0	134.2	109.2	5.9	115.1
Total revenues	$ 482.6	$ 638.3	$ 1,120.9	$ 897.8	$ 894.9	$ 1,792.7	$ 988.5	$ 566.9	$ 1,555.4

For the years ended December 31, 2022, 2021 and 2020, the Company's product sales from Anthrax Vaccines, Nasal Naloxone products, TEMBEXA, ACAM2000 and Other products as a percentage of total product sales were as follows:

	Year Ended December 31,		
	2022	2021	2020
% of product sales:			
Anthrax vaccines	28 %	25 %	38 %
Nasal naloxone products	39 %	43 %	31 %
TEMBEXA	12 %	— %	— %
ACAM2000	7 %	20 %	20 %
Other products	14 %	12 %	11 %

For the year ended December 31, 2022 there were two customers in excess of 10% of total revenues. The USG accounted for 43% of total revenues and the second customer accounted for 10% of total revenues. Both customer's revenue is attributable to the Products segment. For the years ended 2021 and 2020, aside from sales to the USG, there were no sales to an individual customer in excess of 10% of total revenues. For the years ended December 31, 2022, 2021, and 2020, the Company's revenues from customers within the United States comprised 79%, 92% and 93%, respectively, of total revenues.

Termination of manufacturing services agreement with Janssen Pharmaceuticals, Inc.

On July 2, 2020, the Company, through its wholly-owned subsidiary, Emergent Manufacturing Operations Baltimore, LLC, entered into the Agreement with Janssen, one of the Janssen Pharmaceutical Companies of Johnson & Johnson, for large-scale drug substance manufacturing of Johnson & Johnson's investigational SARS-CoV-2 vaccine, Ad26.COV2-S, recombinant based on the AdVac technology (the "Product").

On June 6, 2022, the Company provided to Janssen a notice (the "Notice") of material breach of the Agreement for, among other things, failure by Janssen (i) to provide the Company the requisite forecasts of the required quantity of Product to be purchased by Janssen under the Agreement and (ii) to confirm Janssen's intent to not purchase the requisite minimum quantity of the Product pursuant to the Agreement and instead, wind-down the Agreement ahead of fulfilling these minimum requirements. Later on June 6, 2022, the Company received from Janssen a purported written notice of termination (the "Janssen Notice") of the Agreement for asserted material breaches of the Agreement by the Company, including alleged failure by the Company to perform its obligations in compliance with current good manufacturing practices ("cGMP") or other applicable laws and regulations and alleged failure by the Company to supply Janssen with the Product. Janssen alleged that the Company's breaches were not curable and that, therefore, termination of the Agreement would be effective as of July 6, 2022. The Company disputes Janssen's assertions and allegations, including Janssen's ability to effect termination pursuant to the Janssen Notice. The Company and Janssen disagree on the monetary amounts that are due to the Company as a result of termination by any means. The Company believes the amounts due to the Company

include, but are not limited to, compensation for services provided, reimbursement for raw materials purchased and non-cancelable orders, and fees for early termination. Janssen has alleged that no additional amount is due to the Company and that the Company should pay Janssen an unspecified amount as a result of the Company's alleged failure to perform under the Agreement. The Company has not recorded any contingent liabilities related to Janssen's allegations as the Company believes they are without merit and intends to vigorously defend the Company's position during the dispute resolution process through arbitration.

During the year ended December 31, 2022, there were no impacts on previously recognized revenue or depreciation related to the conclusion of the Agreement. As of December 31, 2022, the Company has no billed or unbilled net accounts receivable related to the Agreement.

Because the arbitration process may extend longer than one year, the Company reclassified $127.7 million from "Inventories, net" and $25.0 million from "Prepaid expenses and other current assets" to "Other assets" in the fourth quarter resulting in $152.7 million in long-term assets related to the Janssen Agreement on the consolidated balance sheet as of December 31, 2022. These assets include termination penalties, certain inventory related items and raw materials inventory representing materials purchased for the Agreement which Janssen has not reimbursed. The Company evaluated the net realizable value of the inventory as of December 31, 2022, concluding that because the Agreement specifies the Company is entitled to, among other things, reimbursement of raw materials and non-cancelable orders in the event of a contract termination for any reason, the Company is entitled to payment from Janssen for these raw materials. Additionally, the Company has $6.2 million of non-cancelable orders as of December 31, 2022 which have not been received and Janssen has not reimbursed.

BARDA Centers of Innovation and Advanced Development and Manufacturing Agreement

In 2020, the Company announced the issuance of a task order under its existing CIADM agreement with BARDA for COVID-19 vaccine development and manufacturing (the "BARDA COVID-19 Development Public Private Partnership"). The BARDA COVID-19 Development Public Private Partnership is considered a lease and is accounted for under ASC 842. The initial task order had a contract value of up to $628.2 million and included the reservation of manufacturing capacity and accelerated expansion of fill/finish capacity valued at $542.7 million and $85.5 million, respectively. Subsequently, the task order was expanded to include incremental capital activities which increased the value to $650.8 million. On November 1, 2021, the Company and BARDA mutually agreed to the completion of the Company's CIADM contract and associated task orders, including the BARDA COVID-19 Development Public Private Partnership. The Company did not recognize lease revenues under this arrangement during the year ended December 31, 2022. Total revenues associated with the base arrangement were $71.3 million and $15.8 million during the years ended December 31, 2021 and December 31, 2020, respectively, and are reflected as a component of contracts and grants revenue on the consolidated statements of operations. Revenues associated with the BARDA COVID-19 Development Public-Private Partnership were $237.6 million and $233.3 million during the years ended December 31, 2021 and December 31, 2020, respectively, and are recorded as CDMO leases on the consolidated statements of operations.

CDMO Operating Leases

Certain multi-year CDMO service arrangements with non-USG customers include operating leases whereby the customer has the right to direct the use of and obtain substantially all of the economic benefits of specific manufacturing suites operated by the Company. The associated revenue is recognized on a straight-line basis over the term of the lease. The remaining term on the Company's operating lease components approximates 2.6 years. The Company utilizes a cost-plus model to determine the stand-alone selling price of the lease component to allocate contract consideration between the lease and non-lease components. During the year ended December 31, 2022, the Company's non-USG lease revenues were $4.9 million, which is included within CDMO leases in the consolidated statement of operations. Excluding future amounts related to the Agreement as discussed above, the Company estimates future operating lease revenues to be $5.1 million in 2023, $0.9 million in 2024, $0.9 million in 2025, and $2.7 million in years beyond 2025.

Transaction price allocated to remaining performance obligations

As of December 31, 2022, the Company expects future revenues of approximately $378.2 million associated with all arrangements entered into by the Company. The Company expects to recognize a majority of the $378.2 million of unsatisfied performance obligations within the next 24 months. The amount and timing of revenue recognition for unsatisfied performance obligations can change. The future revenues associated with unsatisfied performance obligations exclude the value of unexercised option periods in the Company's revenue arrangements. Often the timing of manufacturing activities changes based on customer needs and resource availability. Government funding appropriations can impact the timing of product deliveries. The success of the Company's development activities that receive

development funding support from the USG under development contracts can also impact the timing of revenue recognition.

Contract assets

The Company considers accounts receivable and deferred costs associated with revenue generating contracts, which are not included in inventory or property, plant and equipment and the Company does not currently have a contractual right to bill, to be contract assets. As of December 31, 2022 and December 31, 2021, the Company had $34.8 million and $21.5 million, respectively, of contract assets recorded within accounts receivable, net on the consolidated balance sheets.

Contract liabilities

When performance obligations are not transferred to a customer at the end of a reporting period, cash received associated with the amount allocated to those performance obligations is reflected as contract liabilities on the consolidated balance sheets and is deferred until control of these performance obligations is transferred to the customer.

The following table presents the roll forward of the contract liabilities:

	Contract Liabilities
Balance at December 31, 2020	$ 100.1
Deferral of revenue	279.7
Revenue recognized	(363.4)
Balance at December 31, 2021	$ 16.4
Deferral of revenue	38.9
Revenue recognized	(23.6)
Balance at December 31, 2022	$ 31.7

As of December 31, 2022 and 2021, the current portion of contract liabilities was $26.4 million and $11.7 million, respectively, and was included in other current liabilities on the balance sheet.

Accounts Receivable and Allowance for Expected Credit Losses

Accounts receivable including unbilled accounts receivable contract assets consist of the following:

	December 31,	
	2022	2021
Accounts receivable:		
Billed	$ 102.7	$ 228.1
Unbilled	56.4	49.8
Allowance for expected credit losses	(0.7)	(3.2)
Accounts receivable, net	$ 158.4	$ 274.7

12. Leases

The Company is the lessee for operating corporate leases for offices, R&D facilities and manufacturing facilities. The Company determines if an arrangement is a lease at inception. Operating leases are included in right-of-use ("ROU") assets and liabilities. For a discussion of lessor activities, see Note 11, "Revenue recognition".

The components of lease expense were as follows:

	Year Ended December 31,		
	2022	2021	2020
Operating lease cost:			
Amortization of right-of-use assets	$ 5.6	$ 5.6	$ 4.5
Interest on lease liabilities	1.1	1.3	1.1
Total operating lease cost	$ 6.7	$ 6.9	$ 5.6

Operating lease costs are reflected as components of cost of product sales, cost of contract development and manufacturing, research and development expense and selling, general and administrative expense.

Supplemental balance sheet information related to leases was as follows:

		December 31,	
Leases	Classification	2022	2021
Operating lease right-of-use assets	Other assets	$ 19.4	$ 28.3
Operating lease liabilities, current portion	Other current liabilities	$ 5.8	$ 5.8
Operating lease liabilities	Other liabilities	14.8	24.2
Total operating lease liabilities		$ 20.6	$ 30.0
Operating leases:			
Weighted average remaining lease term (years)		5.9	7.0
Weighted average discount rate		4.1 %	4.1 %

During the year ended December 31, 2022, the Company exercised the option to purchase its Rockville manufacturing facility. As a result, the Company removed the related operating lease right-of-use asset and operating lease liability of $3.5 million and $3.4 million, respectively. The purchased assets have been properly included in "Property, plant and equipment, net" on the Company's consolidated balance sheet as of December 31, 2022.

The Company's leases have remaining lease terms of less than one year to approximately 11 years, some of which include options to extend the leases for up to five years, and some of which include options to terminate the leases within one year.

Lease maturities as of December 31, 2022, are as follows:

Year	As of December 31, 2022
2023	$ 6.5
2024	4.3
2025	2.7
2026	2.3
2027	1.8
Thereafter	5.9
Total undiscounted lease liabilities	23.5
Less: Imputed interest	2.9
Total Lease liabilities	$ 20.6

13. Income taxes

The Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to reverse. Valuation allowances are recorded as appropriate to reduce deferred tax assets to the amount considered likely to be realized.

The Company establishes valuation allowances for deferred income tax assets in accordance with U.S. GAAP, which provides that such valuation allowances shall be established unless realization of the income tax benefits is more likely than not. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

As of December 31, 2022, the Company reassessed the valuation allowance and considered negative evidence, including its significant losses in the current year and the substantial doubt about the Company's ability to continue as a going concern through one year from the date that these financial statements are issued, positive evidence, scheduled reversal of deferred tax liabilities, available taxes in carryback periods, tax planning strategies and projected future taxable income. After assessing both the negative and positive evidence, the Company concluded that it should record a valuation allowance of $43.8 million on its global net operating losses, credits and other deferred tax assets.

The global intangible low-tax income ("GILTI") provisions require the Company to include in its U.S. income tax return foreign subsidiary earnings in excess of an allowable return on the foreign subsidiary's tangible assets. The Company is subject to incremental U.S. tax on GILTI income. The Company has elected to account for GILTI tax in the period in which it is incurred, and therefore has not provided any deferred tax impacts of GILTI in its consolidated financial statements for the year ended December 31, 2022 and 2021. BEAT provisions do not have material impact on the consolidated financial statements.

For the year ended December 31, 2022, the Company has evaluated its historical indefinite reinvestment assertion in connection with the Company's going concern uncertainty. The Company recognized a deferred withholding tax liability for the undistributed earnings of the Company's international subsidiaries available cash and net working capital in the amount of $4.7 million. All other international subsidiaries' outside basis differences are indefinitely reinvested.

Significant components of income taxes attributable to operations consist of the following:

	Year Ended December 31,		
	2022	2021	2020
Current			
Federal	$ (9.6)	$ (3.7)	$ 62.8
State	2.0	14.9	27.7
International	33.6	28.4	14.0
Total current	26.0	39.6	104.5
Deferred			
Federal	(39.0)	38.0	1.1
State	8.2	4.3	—
International	6.9	1.6	(3.5)
Total deferred	(23.9)	43.9	(2.4)
Income tax provision	$ 2.1	$ 83.5	$ 102.1

The Company's net deferred tax liability consists of the following:

	December 31,	
	2022	2021
Deferred tax assets		
Federal losses carryforward	$ 15.3	$ 7.6
State losses carryforward	5.4	3.3
R&D carryforward	18.4	16.6
Stock compensation	10.1	8.9
Foreign losses carryforward	9.1	10.2
Deferred revenue	2.0	0.4
Inventory reserves	10.5	2.9
Lease liability	4.6	6.5
IRC 263A capitalized costs	5.0	3.9
Capitalized R&D	25.9	—
IRC 163(j) Interest Limitation	7.6	—
Other	0.7	5.6
Gross deferred tax assets	114.6	65.9
Valuation allowance	(68.0)	(25.0)
Total deferred tax assets	46.6	40.9
Deferred tax liabilities		
Fixed assets	(62.4)	(75.1)
Intangible assets	(46.1)	(47.6)
Right-of-use asset	(4.3)	(6.1)
Foreign Withholding Tax	(4.7)	—
Other	(0.9)	(2.8)
Total deferred tax liabilities	(118.4)	(131.6)
Net deferred tax liabilities	$ (71.8)	$ (90.7)

As of December 31, 2022, the Company has approximately $73.0 million in U.S. federal net operating loss ("NOL") carryforwards, $36.0 million of NOL's which will expire in varying amounts in 2031 through 2035 and $37.0 million which will carryforward indefinitely, although, limited to eighty percent of taxable income annually. The Company has U.S. federal tax credit carryforwards of $13.4 million which will expire in 2027 through 2042.

As of December 31, 2022, the Company had pre-apportionment state NOLs totaling approximately $1.9 billion primarily in Maryland which will begin to expire in 2025 and post-apportionment NOLs totaling approximately $146.8 million that will begin to expire in 2028. The Company has state R&D tax credit carryforwards of $5.0 million which will expire in 2027 through 2038.

The deductibility of such US federal and state net operating losses and credits may be limited. Under Section 382/383 of the Internal Revenue Code of 1986, as amended (the "Code"), and corresponding provisions of state law, if a corporation undergoes an "ownership change," which generally occurs if the percentage of the corporation's stock owned by 5% stockholders increases by more than 50% over a three-year period, the corporation's ability to use its pre-change NOL carryforwards and other pre-change tax attributes to offset its post-change income may be limited. Certain of the net operating loss carryforwards and the credit carryforwards are subject to an annual limitation pursuant to Internal Revenue Code Section 382 and 383 as a result of historical acquisitions. We may experience ownership changes in the future as a result of subsequent shifts in our stock ownership, some of which may be outside of our control, which may further limit our carryforwards. If we determine that an ownership change has occurred and our ability to use our historical NOL and credit carryforwards is materially limited, it would harm our future operating results by effectively increasing our future tax obligations.

The Company has approximately $51.5 million in net operating losses from foreign jurisdictions as of December 31, 2022, $14.5 million of losses which will expire in varying amounts in 2022 through 2028 and $37.0 million will carryforward indefinitely.

The Company's valuation allowance increased by $43.0 million due to the Company's determination that it is not more likely than not to realize its global net deferred income tax assets and the current year losses incurred within the U.S. The valuation allowance has been recorded primarily against the Company's net operating loss and credit carryforwards.

Income taxes differ from the amount of taxes determined by applying the U.S. federal statutory rate to income before taxes as a result of the following:

	Year Ended December 31,		
	2022	2021	2020
U.S.	$ (445.1)	$ 112.0	$ 362.0
International	223.4	202.4	45.2
Earnings (Losses) before taxes on income	(221.7)	314.4	407.2
Federal tax at statutory rates	$ (46.6)	$ 65.8	$ 85.5
State taxes, net of federal benefit	(10.2)	16.1	23.2
Impact of foreign operations	(7.0)	(16.8)	(7.8)
Change in valuation allowance	43.8	4.3	1.5
Tax credits	(3.5)	(4.7)	(7.6)
Stock compensation	4.7	(4.9)	(7.9)
Goodwill Impairments	1.8	8.3	—
Adjustment of prior year taxes	(0.5)	0.8	(0.7)
Transaction costs	—	0.3	6.0
Compensation limitation	0.7	2.9	2.2
Unrecognized tax benefit	(9.7)	0.3	(0.3)
GILTI, net	20.7	11.4	5.4
Foreign withholding tax	4.7	—	—
Permanent differences	3.2	(0.3)	2.6
Income tax provision (benefit)	$ 2.1	$ 83.5	$ 102.1

The effective annual tax rate for the years ended December 31, 2022, 2021, and 2020 was (1)%, 27% and 25%, respectively.

The effective annual tax rate of (1)% in 2022 is lower than the statutory rate primarily due to the impact of a valuation allowance charge in the US, state and Foreign Jurisdictions, a charge due the Company's indefinite reinvestment assertion, goodwill impairment, GILTI, and other permanent items. This is partially offset by tax credits, favorable rates in foreign jurisdictions, and the release of an indemnified unrecognized tax benefit.

The effective annual tax rate of 27% in 2021 is higher than the statutory rate primarily due to the impact of goodwill impairment, state taxes, GILTI and other non-deductible items. This is partially offset by stock option deduction benefits, tax credits, and favorable rates in foreign jurisdictions. The jurisdictional mix of profit has changed from the prior year largely due to lower U.S. CDMO margins, the termination of the CIADM arrangement in the U.S. and an increase in sales of NARCAN in which a portion of the profit is attributable to a foreign subsidiary.

The effective annual tax rate of 25% in 2020 is higher than the statutory rate primarily due to the impact of state taxes, GILTI, contingent consideration, other non-deductible items and the jurisdictional mix of earnings. This is partially offset by stock option deduction benefits, tax credits, and favorable rates in foreign jurisdictions.

The Company recognizes interest in interest expense and recognizes potential penalties related to unrecognized tax benefits in selling, general and administrative expense, and the total interest and penalties recognized are insignificant. The total unrecognized tax benefits recorded at December 31, 2022 and 2021 of $1.2 million and $9.8 million, respectively, is classified primarily as a non-current liability on the consolidated balance sheets.

The table below presents the gross unrecognized tax benefits activity for the years ended December 31, 2022, 2021 and 2020:

	Year Ended December 31,		
	2022	2021	2020
Gross unrecognized tax benefits, beginning of period	$ 9.8	$ 9.2	$ 10.4
Increases (decreases) for tax positions for prior years	(1.5)	0.4	—
Increases for tax positions for current year	0.9	0.2	0.6
Settlements	—	—	(1.8)
Lapse of statute of limitations	(8.0)	—	—
Gross unrecognized tax benefits, end of period	$ 1.2	$ 9.8	$ 9.2

The total gross unrecognized tax benefit of $1.2 million, includes the release of $8.0 million of liability that related to the 2018 acquisition of PaxVax Holdings Company, Ltd. The liability was offset by an indemnification receivable, both of which were released due to a lapse of the statute of limitation during the year.

The Company does not anticipate a significant change within the next twelve months for unrecognized tax benefits and when resolved, all of these liabilities would impact the effective tax rate. However, the Company maintains a full valuation allowance as of December 31, 2022 and the recognition of any unrecognized tax benefits would be offset with a change in the valuation allowance and therefore there would be no income statement impact.

The Company's federal and state income tax returns for the tax years 2019 and onwards remain open to examination. The Company's tax returns for Canada remain open to examination for the tax years 2014 through 2021. The Company's Irish tax returns remain open to examination for the tax years 2016 through 2021.

As of December 31, 2022, the Company’s 2018 Canadian Scientific Research and Experimental Development Claim is under appeal and the Company’s 2020 Canadian Scientific Research and Experimental Development Claim is under audit. The Company's 2016 and 2017 Canadian income tax returns for the Adapt entities are under audit. The Company’s Irish group is under Level 1 Compliance Intervention review for 2021. In addition, the Company’s 2019 and 2020 New York state income tax returns are under audit.

14. Defined benefit and 401(k) savings plan

The Company sponsors a defined benefit pension plan covering eligible employees in Switzerland (the "Swiss Plan"), which we have agreed to sell as part of our Travel Health business to Bavarian Nordic, described further in Note 18, "Subsequent events". Under the Swiss Plan, the Company and certain of its employees with annual earnings in excess of government determined amounts are required to make contributions into a fund managed by an independent investment fiduciary. Employer contributions must be in an amount at least equal to the employee's contribution. The Swiss Plan's assets are comprised of an insurance contract that has a fair value consistent with its contract value based on the practicability exception using Level 3 inputs. The entire liability is listed as non-current because plan assets are greater than the expected benefit payments over the next year. The Company recognized pension expense related to the Swiss Plan of $0.8 million, $2.0 million and $2.4 million reflected as a component of selling, general and administrative expenses for the years ended December 31, 2022, 2021 and 2020, respectively.

The funded status of the Swiss Plan is as follows:

	Year Ended December 31,	
	2022	2021
Change in Plan Assets:		
Fair value of plan assets, beginning of period	$ 29.3	$ 27.6
Employer contributions	1.5	1.4
Employee contributions	0.9	0.9
Net benefits received	3.4	0.5
Actual return on plan assets	(0.4)	(0.1)
Settlements	(5.0)	—
Currency impact	(0.4)	(1.0)
Fair value of plan assets, end of period	$ 29.3	$ 29.3
Change in Benefit Obligation:		
Projected benefit obligation, beginning of period	$ 46.8	$ 49.2
Service cost	1.9	2.4
Interest Cost	0.1	—
Employee contributions	0.9	0.9
Actuarial gain	(10.0)	(4.6)
Net benefits received	3.4	0.5
Settlements	(5.0)	—
Currency impact	(0.9)	(1.6)
Projected benefit obligation, end of period	$ 37.2	$ 46.8
Funded status, end of period	$ (7.9)	$ (17.5)
Accumulated benefit obligation, end of period	$ 34.0	$ 41.8

Components of net periodic pension cost incurred during the years ended December 31, 2022, 2021 and 2020 are as follows:

	Year Ended December 31,		
	2022	2021	2020
Service cost	$ 1.9	$ 2.4	$ 1.9
Interest cost	0.1	—	0.1
Expected return on plan assets	(0.8)	(0.8)	(0.6)
Amortization of loss	0.1	0.6	0.2
Amortization of prior service credit	(0.1)	(0.2)	(0.2)
Settlements	(0.4)	—	1.0
Net periodic benefit cost	$ 0.8	$ 2.0	$ 2.4

The weighted average assumptions used to calculate the projected benefit obligations are as follows:

	December 31, 2022	December 31, 2021
Discount rate	2.1 %	0.3 %
Expected rate of return	3.5 %	3.0 %
Rate of future compensation increases	1.8 %	1.4 %

The overall expected long-term rate of return on assets assumption considers historical returns, as well as expected future returns based on the fact that investment returns are insured, and the legal minimum interest crediting rate as applicable. Total contributions expected to be made into the plan for the year-ended December 31, 2023 is $1.6 million.

The following table presents gains (losses) recognized in accumulated other comprehensive income (loss) before income tax related to the Company's defined benefit pension plans:

	Year Ended December 31,	
	2022	2021
Net actuarial gain	$ 9.0	$ 5.9
Prior service cost	(0.3)	(1.3)
Total recognized in other comprehensive income (loss)	$ 8.7	$ 4.6

Future benefits expected to be paid as of December 31, 2022 are as follows:

Year	As of December 31, 2022
2023	$ 1.8
2024	1.8
2025	2.0
2026	1.9
2027	2.1
Thereafter	27.6
Total	$ 37.2

401(k) savings plan

The Company has established a defined contribution savings plan under Section 401(k) of the Internal Revenue Code (the "401(k) Plan"). The 401(k) Plan covers substantially all U.S. employees. Under the 401(k) Plan, employees may make elective salary deferrals. During the years ended December 31, 2022, 2021 and 2020, the Company made matching contributions of approximately $8.8 million, $8.9 million and $6.6 million, respectively.

15. Purchase commitments

Purchase commitments are agreements to purchase raw materials and services that are enforceable, legally binding, and specify terms that (1) include fixed or minimum quantities to be purchased, (2) include fixed, minimum or variable price provisions and (3) are longer than one year.

As of December 31, 2022 the Company has approximately $132.8 million of purchase commitments associated with raw materials and CDMO services that will be purchased in the next five years, of which the Company estimates that approximately $125.7 million will be purchased within the next year. For the years ended December 31, 2022, 2021, and 2020, the Company purchased $199.6 million, $110.7 million and $108.0 million, respectively, of materials and services under these commitments.

16. Segment information

The Company reports segment information based on the internal reporting used by management for making decisions and assessing performance. During the first quarter of 2022, the Company revised the reporting that the CODM reviews in order to assess Company performance. The CODM manages the business with a focus on two reportable segments: (1) Products segment consisting of the Government - MCM and Commercial product categories and (2) Services segment focused on CDMO services. The Company evaluates the performance of these reportable segments based on revenue and Adjusted Gross Margin, which is a non-GAAP financial measure. Segment revenue includes external customer sales, but it does not include inter-segment services. The Company defines Adjusted Gross Margin as segment revenue less segment cost of sales reduced for significant events, inventory step-up provisions and changes in fair value of contingent consideration. The Company does not allocate research and development, selling, general and administrative costs, amortization of intangibles assets, interest and other income (expense) or taxes to operating segments in the management reporting reviewed by the CODM. The accounting policies for segment reporting are the same as for the Company as a whole. The Company has recast the related historical information for consistency.

The Company manages its assets on a total company basis, not by operating segment, as the Company's operating assets are shared or commingled. Therefore, the Company's CODM does not regularly review any asset information by operating segment and, accordingly, the Company does not report asset information by operating segment.

The following table includes segment revenues and a reconciliation of the Company's segment adjusted gross margin to the consolidated statement of operations for each of the Company's reporting segments:

	Year Ended December 31,		
	2022	2021	2020
Revenues:			
Products	$ 966.2	$ 1,023.9	$ 989.8
Services [1]	113.3	634.6	450.5
Total segment revenues	1,079.5	1,658.5	1,440.3
Contracts and grants revenue	41.4	134.2	115.1
Total revenues	$ 1,120.9	$ 1,792.7	$ 1,555.4
Less: Cost of sales:			
Cost of Products	$ 424.1	$ 382.0	$ 392.0
Cost of Services	269.6	375.5	132.0
Total cost of sales	$ 693.7	$ 757.5	$ 524.0
Products gross margin	$ 542.1	$ 641.9	$ 597.8
Services gross margin [1]	$ (156.3)	$ 259.1	$ 318.5
Consolidated gross margin [2]	$ 385.8	$ 901.0	$ 916.3
Adjustments to gross margin:			
Products:			
Changes in fair value of contingent consideration	$ 2.6	$ 2.9	$ 31.7
Inventory step-up provision	51.4	—	—
Products adjusted gross margin	$ 596.1	$ 644.8	$ 629.5
Services adjusted gross margin [1]	$ (156.3)	$ 259.1	$ 318.5
Consolidated adjusted gross margin[3]	$ 439.8	$ 903.9	$ 948.0
Other reconciling items:			
Contracts and grants revenue	$ 41.4	$ 134.2	$ 115.1
Adjustments to gross margin	(54.0)	(2.9)	(31.7)
Research and development	(193.0)	(234.0)	(234.5)
Selling, general and administrative	(340.3)	(348.4)	(303.3)
Goodwill impairment	(6.7)	(41.7)	—
Amortization of intangible assets	(59.9)	(58.5)	(59.8)
Interest expense	(37.3)	(34.5)	(31.3)
Other, net	(11.7)	(3.7)	4.7
Income (loss) before income taxes	$ (221.7)	$ 314.4	$ 407.2

[1] Services revenue, Services gross margin and Services Adjusted gross margin for the years ended December 31, 2021 and 2020 includes the impact of $237.6 million and $233.3 million, respectively of CDMO leases revenues related to the BARDA COVID-19 Development Public Private Partnership which ended in November 2021.

[2] Total segment revenues less total cost of sales.

[3] Consolidated gross margin plus adjustments to gross margin.

The following table includes depreciation expense for each segment:

	Year Ended December 31,		
	2022	2021	2020
Depreciation:			
Products	$ 32.9	$ 27.8	$ 27.2
Services	43.2	28.3	17.3
Other	7.3	6.1	5.6
Total	$ 83.4	$ 62.2	$ 50.1

The following table includes revenues by country. Revenues have been attributed based on the location of the customer:

	Year Ended December 31,		
	2022	2021	2020
Revenue:			
United States	$ 889.5	$ 1,642.5	$ 1,446.0
Canada	148.6	66.7	46.0
Other	82.8	83.5	63.4
Total revenues	$ 1,120.9	$ 1,792.7	$ 1,555.4

The following table included long-lived assets, net by country. Long-lived assets, net includes right-of-use assets, net and property, plant & equipment, net, excluding software, net:

	December 31,	
	2022	2021
Long-lived assets, net:		
United States	$ 696.1	$ 705.5
Switzerland	88.1	73.1
Canada	37.5	35.0
Other	5.0	6.0
Total long-lived assets, net	$ 826.7	$ 819.6

17. Litigation

Securities and shareholder litigation

With respect to the specific legal proceedings and claims described below, unless otherwise noted, the amount or range of possible losses is not reasonably estimable. There can be no assurance that the settlement, resolution, or other outcome of one or more matters, including the matters set forth below, during any subsequent reporting period will not have a material adverse effect on the Company's results of operations or cash flows for that period or on the Company's financial condition.

On April 20, 2021, May 14, 2021, and June 2, 2021, putative class action lawsuits were filed against the Company and certain of its current and former senior officers in the United States District Court for the District of Maryland on behalf of purchasers of the Company's common stock, seeking to pursue remedies under the Securities Exchange Act of 1934. These complaints were filed by Palm Tran, Inc. – Amalgamated Transit Union Local 1577 Pension Plan; Alan I. Roth; and Stephen M. Weiss, respectively. The complaints allege, among other things, that the defendants made false and misleading statements about the Company's manufacturing capabilities with respect to COVID-19 vaccine bulk drug substance (referred to herein as "CDMO Manufacturing Capabilities"). These cases were consolidated on December 23, 2021, under the caption In re Emergent BioSolutions Inc. Securities Litigation, No. 8:21-cv-00955-PWG (the "Federal Securities Class Action"). The Lead Plaintiffs in the consolidated matter are Nova Scotia Health Employees' Pension Plan and The City of Fort Lauderdale Police & Firefighters' Retirement System. The defendants filed a motion to dismiss on May 19, 2022 and the Lead Plaintiff filed an opposition to that motion on July 19, 2022. The defendants believe that the allegations in the complaints are without merit and intend to defend the matters vigorously. Given the uncertainty of litigation, the preliminary stage of the cases, and the legal standards that must be met for, among other things, class certification and success on the merits, the Company cannot reasonably estimate the possible loss or range of loss, if any, that may result from the consolidated action.

On June 29, 2021, Lincolnshire Police Pension Fund ("Lincolnshire"), and on August 16, 2021, Pooja Sayal, filed putative shareholder derivative lawsuits in the United States District Court for the District of Maryland on behalf of the Company against certain of the Company's current and former officers and directors for breach of fiduciary duties, waste of corporate assets, and unjust enrichment, each allegation related to the CDMO Manufacturing Capabilities. In addition to monetary damages, the complaints seek the implementation of multiple corporate governance and internal policy changes. On November 16, 2021, the cases were consolidated under the caption In re Emergent BioSolutions Inc. Stockholder Derivative Litigation, Master Case No. 8:21-cv-01595-PWG. On January 3, 2022, the Lincolnshire complaint was designated as the operative complaint in the consolidated action. On April 13, 2022 the Court approved the parties joint

stipulation to and stay of the proceedings and discovery until the close of fact discovery in the Federal Securities Class Action. The defendants believe that the allegations in the complaints are without merit and intend to defend the matter vigorously.

On September 15, 2021, September 16, 2021 and November 12, 2021, putative shareholder derivative lawsuits were filed by Chang Kyum Kim, Mark Nevins and Employees Retirement System of the State of Rhode Island, North Collier Fire Control and Rescue District Firefighters Pension Plan, and Pembroke Pines Firefighters & Police Officers Pension Fund, respectively, in The Court of Chancery of the State of Delaware on behalf of the Company against certain of its current and former officers and directors for breach of fiduciary duties, unjust enrichment and insider trading, each allegation related to the CDMO Manufacturing Capabilities. In addition to monetary damages, the complaints seek the implementation of multiple corporate governance and internal policy changes. On February 2, 2022, the cases were consolidated under the caption In re Emergent BioSolutions, Inc. Derivative Litigation, C.A. No. 2021-0974-MTZ with the institutional investors as co-lead plaintiffs. On March 4, 2022, the defendants' filed a motion to dismiss the complaint. Ruling on this motion is stayed pursuant to a March 29, 2022 order staying all proceedings pending a final, non-appealable judgment in the Federal Securities Class Action.

On December 3, 2021, December 22, 2021 and January 18, 2022, putative shareholder derivative lawsuits were filed by Zachary Elton, Eric White and Jeffrey Reynolds in the Circuit Court for Montgomery County, Maryland on behalf of the Company against certain of its current and former officers and directors for breach of fiduciary duty, unjust enrichment, waste of corporate assets, failing to maintain internal controls, making or causing to be made false and/or misleading statements and material omissions, insider trading and otherwise violating the federal securities laws, each allegation related to the CDMO Manufacturing Capabilities. The complaints seek monetary and punitive damages. On February 22, 2022, the Court entered an order consolidating these actions under case number C-15-21-CV-000496. On March 9, 2022, the parties filed a Joint Stipulation of Stay of Proceedings and Discovery, pursuant to which the parties agreed to stay all proceedings until 30 calendar days after a ruling on the defendants' motion to dismiss the Federal Securities Class Action. The Court approved the Joint Stipulation on March 14, 2022.

In addition to the above actions, the Company has received inquiries and subpoenas to produce documents related to these matters from the Department of Justice, the SEC, the Maryland Attorney General's Office, and the New York Attorney General's Office. The Company produced or is producing documents as required in response and will continue to cooperate with these government inquiries. The Company also received inquiries and subpoenas from Representative Carolyn Maloney and Representative Jim Clyburn, members of the House Committee on Oversight and Reform and the Select Subcommittee on the Coronavirus Crisis and Senator Murray of the Committee on Health, Education, Labor and Pensions. The Company produced documents and provided testimony and briefings as requested in response to these inquiries.

18. Subsequent events

2023 Organizational Restructuring Plan

On January 9, 2023, the Company announced an organizational restructuring plan (the "Plan") intended to reduce operating costs, improve operating margins, and continue advancing the Company's ongoing commitment to profitable growth. The Plan includes a reduction of the Company's current workforce by approximately five percent. Decisions regarding the elimination of positions are subject to local law and consultation requirements in certain countries, as well as the Company's business needs.

The Company estimates that it will incur approximately $9.0 million to $11.0 million in charges in connection with the Plan, which it expects to incur in the first quarter of fiscal 2023. These charges consist primarily of charges related to employee transition, severance payments, employee benefits, and share-based compensation.

Agreement to Sell Travel Business

On February 15, 2023, we entered into the Sale Agreement with Bavarian Nordic, under which we agreed to sell our travel health business, including rights to Vaxchora and Vivotif, as well as our development-stage chikungunya vaccine candidate CHIKV VLP, our manufacturing site in Bern, Switzerland and certain of our development facilities in San Diego, California for a cash purchase price of $270.0 million, subject to certain customary adjustments. In addition, we may receive milestone payments of up to $80.0 million related to the development of CHIKV VLP and receipt of marketing approval and authorization in the U.S. and Europe, and sales-based milestones payments of up to $30.0 million based on aggregate net sales of Vaxchora and Vivotif in calendar year 2026. Approximately 280 employees are expected to join Bavarian Nordic as part of the transaction.

The transaction is expected to close in the second quarter of 2023, subject to certain customary closing conditions, including (1) the expiration or earlier termination of the applicable waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, (2) receipt of required clearances and approvals under Spain's competition laws, (3) receipt of certain Swiss real property approvals, (4) no material adverse effect having occurred with respect to the Business, and (5) certain other customary conditions.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our chief executive officer and chief financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Based on the evaluation of our disclosure controls and procedures as of December 31, 2022, our chief executive officer and chief financial officer concluded that, as of such date, that the disclosure controls and procedures were not effective due to a material weakness in internal control over financial reporting, described below.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2022. In making this assessment, our management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission in *Internal Control-Integrated Framework* (2013 Framework). As a result of this assessment, our management concluded that, as of December 31, 2022, our internal control over financial reporting was not effective due to an identified material weakness related to the improper capitalization of inventory. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. While this did not result in a material misstatement to our consolidated financial statements for any prior periods through and including December 31, 2022, there was a reasonable possibility that a material misstatement of our interim or annual financial statements would not be prevented or detected on a timely basis.

More specifically, the material weakness is due to insufficient controls to related to our assessment of pre-launch materials meeting the criteria for capitalization, which requires those materials to have economic value and a high probability of regulatory approval.

Remediation

We have initiated and begun to implement measures designed to improve our internal control over financial reporting related to the capitalization of inventory, including documenting a formal policy on the accounting for pre-paunch materials purchased for use in R&D activities, providing additional training related to the new policy, implementing a monthly control to review pre-launch inventory with corporate finance to ensure proper accounting treatment. As a result of these efforts and given that the deficiencies relate to specific adjustments that were made during the period ended December 31, 2022, we believe that the Inventory Capitalization Issue may be remediated during the first quarter of 2023.

Ernst & Young LLP, the independent registered public accounting firm that has audited our consolidated financial statements included herein, has issued an attestation report on the effectiveness of our internal control over financial reporting as of December 31, 2022, a copy of which is included in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

Except for the material weakness described above, there has been no change in the Company's internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) that occurred during the quarter ended December 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

To the Stockholders and the Board of Directors of Emergent BioSolutions Inc.

Opinion on Internal Control over Financial Reporting

We have audited Emergent BioSolutions Inc. and subsidiaries' internal control over financial reporting as of December 31, 2022, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). In our opinion, because of the effect of the material weakness described below on the achievement of the objectives of the control criteria, Emergent BioSolutions Inc. and subsidiaries (the Company) has not maintained effective internal control over financial reporting as of December 31, 2022, based on the COSO criteria.

A material weakness is a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the Company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment. Management has identified a material weakness in controls related to the Company's inventory process.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets of the Company as of December 31, 2022 and 2021, the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' equity and cash flows for each of the three years in the period ended December 31, 2022, and the related notes and financial statement schedule listed in the Index at Item 15. This material weakness was considered in determining the nature, timing and extent of audit tests applied in our audit of the 2022 consolidated financial statements, and this report does not affect our report dated March 1, 2023, which expressed an unqualified opinion that included an explanatory paragraph regarding the Company's ability to continue as a going concern.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become

inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ Ernst & Young LLP

Tysons, Virginia

March 1, 2023

ITEM 9B. OTHER INFORMATION

Not applicable.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS.

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Code of Ethics

We have adopted a code of business conduct and ethics that applies to our directors, officers (including our principal executive officer, principal financial officer, principal accounting officer or controller, or persons performing similar functions), as well as our other employees. A copy of our code of business conduct and ethics is available on our website at www.emergentbiosolutions.com. We intend to post on our website all disclosures that are required by applicable law, the rules of the SEC or the New York Stock Exchange concerning any amendment to, or waiver of, our code of business conduct and ethics. The reference to our website is intended to be an inactive textual reference only. Neither the information on or that can be accessed through our website are incorporated by reference in this Annual Report on Form 10-K.

The remaining information required by Item 10 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 Annual Meeting of Stockholders, to be filed with the U.S. Securities and Exchange Commission ("SEC") within 120 days following the end of our fiscal year.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 annual meeting of stockholders, to be filed with the SEC within 120 days following the end of our fiscal year.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 12 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 Annual Meeting of Stockholders, to be filed with the SEC within 120 days following the end of our fiscal year.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by Item 13 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 Annual Meeting of Stockholders, to be filed with the SEC within 120 days following the end of our fiscal year.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 is hereby incorporated by reference from our Definitive Proxy Statement relating to our 2023 Annual Meeting of Stockholders, to be filed with the SEC within 120 days following the end of our fiscal year.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

Financial Statements

The following financial statements and supplementary data are filed as a part of this Annual Report on Form 10-K in Part II, Item 8.

- Report of Independent Registered Public Accounting Firm (PCAOB ID: 42)
- Consolidated Balance Sheets at December 31, 2022 and 2021
- Consolidated Statements of Operations for the years ended December 31, 2022, 2021 and 2020
- Consolidated Statements of Comprehensive Income (Loss) for the years ended December 31, 2022, 2021 and 2020
- Consolidated Statements of Cash Flows for the years ended December 31, 2022, 2021 and 2020
- Consolidated Statement of Changes in Stockholders' Equity for the years ended December 31, 2022, 2021 and 2020
- Notes to Consolidated Financial Statements

Financial Statement Schedules

Schedule II - Valuation and Qualifying Accounts for the years ended December 31, 2022, 2021 and 2020 has been filed as part of this annual report on Form 10-K. All other financial statement schedules are omitted because they are not applicable or the required information is included in the financial statements or notes thereto.

Exhibits

Those exhibits required to be filed by Item 601 of Regulation S-K are listed in the Exhibit Index immediately preceding the exhibits hereto and such listing is incorporated herein by reference.

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

(in millions)	Beginning Balance	Charged to Costs and Expenses	Deductions	Ending Balance
Year Ended December 31, 2022				
Inventory allowance	$ 42.7	79.1	(40.5)	$ 81.3
Prepaid expenses and other current assets allowance	$ 3.7	3.9	(0.5)	$ 7.1
Year Ended December 31, 2021				
Inventory allowance	$ 37.6	37.9	(32.8)	$ 42.7
Prepaid expenses and other current assets allowance	$ 3.9	0.2	(0.4)	$ 3.7
Year Ended December 31, 2020				
Inventory allowance	$ 17.9	48.0	(28.3)	$ 37.6
Prepaid expenses and other current assets allowance	$ 4.0	0.5	(0.6)	$ 3.9

Exhibit Index

All documents referenced below were filed pursuant to the Securities Exchange Act of 1934 by the Company, (File No. 001-33137), unless otherwise indicated.

Exhibit Number		Exhibit Description
3.1		Third Restated Certificate of Incorporation of the Company (incorporated by reference to Exhibit 3 to the Company's Quarterly Report on Form 10-Q filed on August 5, 2016).
3.2		Amended and Restated By-laws of the Company (incorporated by reference to Exhibit 3 to the Company's Current Report on Form 8-K filed on August 16, 2012).
4.1		Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to Amendment No. 3 to the Company's Registration Statement on Form S-1 filed on October 20, 2006) (Registration No. 333-136622).
4.2		Registration Rights Agreement, dated as of September 22, 2006, among the Company and the stockholders listed on Schedule 1 thereto (incorporated by reference to Exhibit 4.3 to Amendment No. 1 to the Company's Registration Statement on Form S-1 filed on September 25, 2006) (Registration No. 333-136622).
4.3		Agreement to Terminate Class A Stockholders Registration Rights Agreement, dated December 9, 2021 by and among Emergent BioSolutions Inc., Intervac, L.L.C. and BioVac, L.L.C. (incorporated by reference to Exhibit 4.3 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
4.4		Indenture, dated as of January 29, 2014, between the Company and Wells Fargo Bank, National Association, including the form of 2.875% Convertible Senior Notes due 2021 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on January 29, 2014).
4.5		Indenture, dated as of August 7, 2020, by and among the Company, certain subsidiaries of the Company and U.S. Bank National Association, as trustee. (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed on August 7, 2020.) (incorporated by reference to Exhibit 4.1 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
4.6		Form of 3.875% Senior Unsecured Note due 2028 (incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K, filed on August 7, 2020.) (incorporated by reference to Exhibit 4.2 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
4.7		Description of the Company's Securities(incorporated by reference to Exhibit 4.6 to the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.1		Amended and Restated Credit Agreement, dated October 15, 2018, by and among Emergent BioSolutions Inc., the lenders party thereto from time to time, and Wells Fargo Bank, National Association, as the Administrative Agent (incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K, filed on October 15, 2018).
10.2		First Amendment to Amended and Restated Credit Agreement, dated June 27, 2019 (incorporated by reference to Exhibit 10.2 to the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.3	*	Second Amendment to Amended and Restated Credit Agreement, dated August 7, 2020 (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K, filed on August 7, 2020).
10.4	#	Consent, Limited Waiver, and Third Amendment to the Amended and Restated Credit Agreement, dated February 14, 2023.
10.5	*	Emergent BioSolutions Inc. 2006 Stock Incentive Plan (incorporated by reference to Exhibit 10.3 to Amendment No. 5 to the Company's Registration Statement on Form S-1 filed on October 30, 2006) (Registration No. 001-33137).
10.6	*	Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 7, 2009).
10.7	*	Second Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan (incorporated by reference to Appendix A to the Company's definitive proxy statement on Schedule 14A filed on April 6, 2012).
10.8	*	Third Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan (incorporated by reference to Appendix A to the Company's definitive proxy statement on Schedule 14A filed on April 7, 2014).

Exhibit Number		Exhibit Description
10.9	*	Fourth Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on August 5, 2016).
10.10	#	Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan Approved by the Compensation Committee of the Board of Directors of Emergent BioSolutions Inc. on January 4, 2023.
10.11	*	Emergent BioSolutions Inc. Stock Incentive Plan (incorporated by reference to Exhibit 99 to Registration Statement on Form S-8, filed on May 30, 2018).
10.12	*	Form of Director Nonstatutory Stock Option Agreement (incorporated by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.13	*	Form of Director Restricted Stock Unit Agreement (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.14	*	Global Form of Restricted Stock Unit Award Agreement (incorporated by reference to Exhibit 10.13 to the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.15	*	Global Form of Non-Qualified Stock Option Agreement (incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed on February 25, 2020).
10.16	*	Form of 2019-2021 Performance-Based Stock Unit Award Agreement (incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K filed on February 12, 2019).
10.17	*	Form of 2020-2022 Performance-Based Stock Unit Award Agreement (incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K filed on February 18, 2020).
10.18	*	Form of 2021-2023 Performance-Based Stock Unit Award Agreement (incorporated by reference to Exhibit 99 to the Company's Current Report on Form 8-K filed on February 16, 2021).
10.19	†*	Form of 2022-2024 Performance-Based Stock Unit Award Agreement (incorporated by reference to Exhibit 10 to Current Report on Form 8-K filed on February 22, 2022).
10.20	*	Form of Indemnity Agreement for Directors and Senior Officers (incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K filed on January 18, 2013).
10.21	*	Annual Bonus Plan for Executive Officers (incorporated by reference to Exhibit 10.7 to the Company's Annual Report on Form 10-K filed on March 5, 2010).
10.22	*	Amended and Restated Senior Management Severance Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 22, 2011).
10.23	*	Second Amended and Restated Senior Management Severance Plan (incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K filed on July 16, 2015).
10.24	†	Solicitation/Contract/Order for Commercial Items (the CDC BioThrax Procurement Contract), effective December 8, 2016, from the Centers for Disease Control and Prevention to Emergent Biodefense Operations Lansing LLC (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K, filed on February 28, 2017).
10.25	†	Modification No. 1, effective January 27, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.22 to the Company's Annual Report on Form 10-K filed on February 23, 2018).
10.26	†	Modification No. 2, effective February 23, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.23 to the Company's Annual Report on Form 10-K filed on February 23, 2018).
10.27		Modification No. 3, effective March 22, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.24 to the Company's Annual Report on Form 10-K filed on February 23, 2018).
10.28	†	Modification No. 4, effective April 5, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.25 to the Company's Annual Report on Form 10-K filed on February 23, 2018).
10.29	†	Modification No. 5, effective September 8, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 3, 2017).
10.30	†	Modification No. 6, effective September 21, 2017, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.27 the Company's Annual Report on Form 10-K filed on February 23, 2018).
10.31	†	Modification No. 7, effective February 26, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 4, 2018).

Exhibit Number		Exhibit Description
10.32		Modification No. 8, effective March 6, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on May 4, 2018).
10.33	†	Modification No. 9, effective June 6, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on August 3, 2018).
10.34	†	Modification No. 10, effective June 18, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on August 3, 2018).
10.35	†	Modification No. 11, effective June 20, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on August 3, 2018).
10.36	†	Modification No. 12, effective June 21, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on August 3, 2018).
10.37	†	Modification No. 13, effective September 21, 2018 to the CDC BioThrax Procurement (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 2, 2018).
10.38	†	Modification No. 14, effective October 1, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.45 the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.39	†	Modification No. 15, effective December 7, 2018, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.46 the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.40	†	Modification No. 16, effective January 14, 2019, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.47 the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.41	††	Modification No. 17, effective June 13, 2019, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 2, 2019).
10.42	††	Modification No. 18, effective September 11, 2019, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.39 the Company's Annual Report on Form 10-K filed on February 25, 2020).
10.43	††	Modification No. 19, effective January 6, 2020, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.40 the Company's Annual Report on Form 10-K filed on February 25, 2020).
10.44	††	Modification No. 20, effective January 7, 2020, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.41 the Company's Annual Report on Form 10-K filed on February 25, 2020).
10.45	††	Modification No. 21, effective January 7, 2020, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.45 the Company's Annual Report on Form 10-K filed on February 19, 2021)
10.46	††	Modification No. 22 to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.46 the Company's Annual Report on Form 10-K filed on February 19, 2021)
10.47	††	Modification No. 23, effective September 30, 2020, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.47 the Company's Annual Report on Form 10-K filed on February 19, 2021)
10.48	††	Modification No. 24, effective February 2, 2021, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021).
10.49	††	Modification No. 25, effective September 29, 2021, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021).
10.50	††	Modification No. 26, effective November 1, 2021, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.48 the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.51	†	Modification No. 27, effective March 31, 2022, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on April 29, 2022).

Exhibit Number		Exhibit Description
10.52	†	Modification No. 28, effective April 14, 2022, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 2, 2022).
10.53	†	Modification No. 29, effective June 16, 2022, to the CDC BioThrax Procurement Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on August 2, 2022).
10.54	†	Award/Contract (the BARDA AV7909 Contract), effective September 30, 2016, from the BioMedical Advanced Research and Development Authority to Emergent Product Development Gaithersburg Inc. (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 9, 2016).
10.55	†	Modification No. 1, effective March 16, 2017, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021)
10.56	†	Modification No. 2, effective August 29, 2018, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021).
10.57	††	Modification No. 3, effective July 30, 2019, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on November 9, 2019).
10.58	††	Modification No. 4, effective March 3, 2020, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on May 1, 2020).
10.59	††	Modification No. 5, effective April 10, 2020, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on May 1, 2020).
10.60	††	Modification No. 6, effective July 13, 2020, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.61	††	Modification No. 7, effective December 2, 2020, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.62	††	Modification No. 8, effective March 22, 2021, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.63	††	Modification No. 9, effective April 21, 2021, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.64	††	Modification No. 10, effective June 10, 2021 to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.65	††	Modification No. 11, effective September 30, 2021, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021).
10.66	††	Modification No. 12, effective December 2, 2021, to the BARDA AV7909 Contract (incorporated by reference to Exhibit 10.61 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.67	†	License Agreement, dated as of December 15, 2014, by and between Opiant Pharmaceuticals, Inc. (formerly known as Lightlake Therapeutics Inc.) and Adapt Pharma Operations Limited. (incorporated by reference to Exhibit 10.51 the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.68	†	Amendment No. 1 to License Agreement, dated as of December 13, 2016, by and between Opiant Pharmaceuticals, Inc. and Adapt Pharma Operations Limited. (incorporated by reference to Exhibit 10.52 the Company's Annual Report on Form 10-K filed on February 22, 2019).
10.69		Amendment No. 2 to License Agreement, dated December 15, 2014, by and between Opiant Pharmaceuticals, Inc. and Adapt Pharma Operations Limited, effective March 18, 2019 (incorporated by reference to Exhibit 10.1 the Company's Quarterly Report on Form 10-Q filed on May 8, 2019).

Exhibit Number		Exhibit Description
10.70	††	Award/Contract, effective August 30, 2019 (ACAM2000 Contract), from the Assistant Secretary, U.S. Department of Health and Human Services (ASPR/OPM) to Emergent Product Development Gaithersburg Inc. (incorporated by reference to Exhibit 10.48 the Company's Annual Report on Form 10-K filed on February 25, 2020).
10.71	††	Modification No. 1, effective, May 28, 2020 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on July 31, 2020).
10.72	††	Modification No. 2, effective, October 28, 2020 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.60 the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.73	††	Modification No. 3, effective, April 1, 2021 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.74	††	Modification No. 4, effective, July 13, 2021 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.69 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.75	††	Modification No. 5, effective, September 29, 2021 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.70 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.76	††	Modification No. 6, effective, November 1, 2021 to the ACAM2000 Contract (incorporated by reference to Exhibit 10.71 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.77	†	Award/Contract, effective June 15, 2012 (BARDA ADM Contract), from the BioMedical Advance Research and Development Authority to Emergent Manufacturing Operations Baltimore LLC. (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on July 31, 2020).
10.78	††	Order for Supplies and Services Between Emergent Manufacturing Operations Baltimore LLC and the BioMedical Advance Research and Development Authority, dated April 2, 2020, under the BARDA ADM Contract (Task Order 75A50120F33006) (incorporated by reference to Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.79	††	Modification No. 1, effective April 12, 2021, to Task Order 75A50120F33006 (incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.80	††	Modification No. 3, effective October 1, 2021, to Task Order 75A50120F33006 (incorporated by reference to Exhibit 10.75 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.81	††	Modification No. 4, effective November 1, 2021, to Task Order 75A50120F33006 (incorporated by reference to Exhibit 10.76 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.82	††	Order for Supplies and Services Between Emergent Manufacturing Operations Baltimore LLC and the BioMedical Advance Research and Development Authority, dated May 24, 2020, under the BARDA ADM Contract (Task Order 75A50120F33007) (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on July 31, 2020).
10.83	††	Modification No. 1, effective August 24, 2020, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.84	††	Modification No. 2, effective September 18, 2020, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.64 to the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.85	††	Modification No. 3, effective October 7, 2020, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.65 to the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.86	††	Modification No. 4, effective January 29, 2021, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.87	††	Modification No. 5, effective February 22, 2021, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.88	††	Modification No. 6, effective March 24, 2021, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).

Exhibit Number		Exhibit Description
10.89	††	Modification No. 7, effective May 24, 2021, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.90	††	Modification No. 8, effective November 1, 2021, to Task Order 75A50120F33007 (incorporated by reference to Exhibit 10.85 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.91	††	Order for Supplies and Services Between Emergent Manufacturing Operations Baltimore LLC and the BioMedical Advance Research and Development Authority, dated August 6, 2020, under the BARDA ADM Contract (Task Order 75A50120F33008). (incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.92	††	Modification No. 1, effective August 24, 2020, to Task Order 75A50120F33008 (incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.93	††	Modification No. 2, effective November 17, 2020, to Task Order 75A50120F33008. (incorporated by reference to Exhibit 10.68 the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.94	††	Modification No. 19, effective, May 25, 2020, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on July 31, 2020).
10.95	††	Modification No. 20, effective, May 26, 2020, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on July 31, 2020).
10.96	††	Modification No. 21, effective June 12, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.97	††	Modification No. 22, effective June 12, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.98	††	Modification No. 23, effective July 22, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.99	††	Modification No. 24, effective August 28, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.100	††	Modification No. 25, effective September 23, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.101	††	Modification No. 26, effective November 2, 2020 to the BARDA ADM Contract (incorporated by reference to Exhibit 10.77 the Company's Annual Report on Form 10-K filed on February 19, 2021).
10.102	††	Modification No. 27, effective May 6, 2021, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.103	††	Modification No. 28, effective May 27, 2021, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.104	††	Modification No. 30, effective September 30, 2021, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q filed on November 5, 2021).
10.105	††	Modification No. 31, effective October 20, 2021, to the BARDA ADM Contract (incorporated by reference to Exhibit 10.100 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.106	††	Modification No. 32, effective November 1, 2021, to the BARDA ADM Contract. (incorporated by reference to Exhibit 10.101 to the Company's Annual Report on Form 10-K filed on February 25, 2022).
10.107	††	Master Services Agreement, dated July 24, 2020, by and between Emergent Manufacturing Operations Baltimore, LLC and AstraZeneca Pharmaceuticals LP. (AZ MSA) (incorporated by reference to Exhibit 10.12 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).

Exhibit Number		Exhibit Description
10.108	††	Manufacturing Product Schedule, dated July 26, 2020 to AZ MSA (incorporated by reference to Exhibit 10.13 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.109	††	Work Order to Manufacturing Services Agreement, dated June 10, 2020, between Emergent Manufacturing Operations Baltimore, LLC and AstraZeneca Pharmaceuticals LP (included as part of AZ MSA) (incorporated by reference to Exhibit 10.14 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.110	††	Amendment No. 1, effective September 30, 2020, to AZ MSA (incorporated by reference to Exhibit 10.15 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.111	††	Amendment No. 2, effective October 30, 2020, to AZ MSA (incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.112	††	Amendment No. 3, effective November 25, 2020, to AZ MSA (incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.113	††	Amendment No. 4, effective January 21, 2021, to AZ MSA (incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.114	††	Change Order No. 1 to Work Order #5997-01, effective July 31, 2020, to AZ MSA (incorporated by reference to Exhibit 10.11 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.115	††	Change Order No. 2 to Work Order #5997-01, effective August 04, 2020, to AZ MSA (incorporated by reference to Exhibit 10.12 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.116	††	Change Order No. 4 to Work Order #5997-01, effective November 17, 2020, to AZ MSA (incorporated by reference to Exhibit 10.13 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.117	††	Change Order No. 5 to Work Order #5997-01, effective September 16, 2020, to AZ MSA (incorporated by reference to Exhibit 10.14 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.118	††	Change Order No. 6 to Work Order #5997-01, effective October 13, 2020, to AZ MSA (incorporated by reference to Exhibit 10.15 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.119	††	Change Order No. 10 to Work Order #5997-01, effective March 10, 2021, to AZ MSA (incorporated by reference to Exhibit 10.16 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.200	††	Change Order No. 13 to Work Order #5997-01, effective April 23, 2021, to AZ MSA (incorporated by reference to Exhibit 10.17 to the Company's Quarterly Report on Form 10-Q filed on July 30, 2021).
10.201	††	Manufacturing Services Agreement, dated July 2, 2020, by and between Emergent Manufacturing Operations Baltimore, LLC and Janssen Pharmaceuticals, Inc., one of the Janssen Pharmaceutical Companies of Johnson & Johnson (JNJ MSA) (incorporated by reference to Exhibit 10.16 to the Company's Quarterly Report on Form 10-Q filed on November 6, 2020).
10.202	††	Amendment No. 1, effective February 25, 2021, to JNJ MSA (incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on April 30, 2021).
10.203	†	Asset Purchase Agreement, dated May 15, 2022, by and among Emergent BioSolutions Inc., the Sellers identified therein, Chimerix, Inc., (incorporated by reference to Exhibit 2 to the Company's Current Report on Form 8-K, filed on May 16, 2022).
10.204	#††	Purchase and Sale Agreement dated February 15, 2023 by and between Emergent BioSolutions Inc., through its wholly owned subsidiaries Emergent International Inc. and Emergent Travel Health Inc. and Bavarian Nordic.
21	#	Subsidiaries of the Company.
23	#	Consent of Independent Registered Public Accounting Firm.
31.1	#	Certification of the Chief Executive Officer pursuant to Exchange Act Rule 13a-14(a).
31.2	#	Certification of the Chief Financial Officer pursuant to Exchange Act Rule 13a-14(a).
32.1	#	Certification of the Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	#	Certification of the Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

Exhibit Number		Exhibit Description
101	#	The following financial information related to the Company's Annual Report on Form 10-K for the year ended December 31, 2022, formatted in iXBRL (Inline Extensible Business Reporting Language): (i) the Consolidated Balance Sheets, (ii) the Consolidated Statements of Operations, (iii) the Consolidated Statements of Comprehensive Income, (iv) the Consolidated Statements of Cash Flows, (v) the Consolidated Statement of Changes in Stockholders' Equity; (vi) the related Notes to Consolidated Financial Statements; and (vii) the Cover Page.
104	#	Cover Page Interactive Data File, formatted in iXBRL and contained in Exhibit 101.
	#	Filed herewith
	†	Confidential treatment granted by the SEC as to certain portions. Confidential materials omitted and filed separately with the SEC.
	††	Certain confidential portions of this exhibit were omitted by means of marking such portions with asterisks because the identified confidential portions (i) are not material and (ii) would be competitively harmful if publicly disclosed.
	*	Management contract or compensatory plan or arrangement filed herewith in response to Item 15(a) of Form 10-K.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

EMERGENT BIOSOLUTIONS INC.

By: /s/RICHARD S. LINDAHL
Richard S. Lindahl
Executive Vice President, Chief Financial Officer and Treasurer
Date: March 1, 2023

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/Robert G. Kramer Sr. Robert G. Kramer Sr.	President, Chief Executive Officer and Director (Principal Executive Officer)	March 1, 2023
/s/Richard S. Lindahl Richard S. Lindahl	Executive Vice President, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	March 1, 2023
/s/Zsolt Harsanyi, Ph.D. Zsolt Harsanyi, Ph.D.	Director	March 1, 2023
/s/Kathryn Zoon, Ph.D. Kathryn Zoon, Ph.D.	Director	March 1, 2023
/s/Ronald B. Richard Ronald B. Richard	Director	March 1, 2023
/s/Louis W. Sullivan, M.D. Louis W. Sullivan, M.D.	Director	March 1, 2023
/s/George Joulwan George Joulwan	Director	March 1, 2023
/s/Jerome Hauer, Ph.D. Jerome Hauer, Ph.D.	Director	March 1, 2023
/s/Marvin White Marvin White	Director	March 1, 2023
/s/Sujata Dayal Sujata Dayal	Director	March 1, 2023
/s/Keith Katkin Keith Katkin	Director	March 1, 2023

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [...], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE OR CONFIDENTIAL.

EXECUTION VERSION

CONSENT, LIMITED WAIVER AND THIRD AMENDMENT TO AMENDED AND RESTATED CREDIT AGREEMENT

CONSENT, LIMITED WAIVER AND THIRD AMENDMENT TO AMENDED AND RESTATED CREDIT AGREEMENT (this "Consent and Limited Waiver"), dated as of February 14, 2023, among EMERGENT BIOSOLUTIONS INC., a Delaware corporation (the "Borrower"), the Guarantors (as defined in the Credit Agreement referred to below) party hereto, the Lenders party hereto (the "Consenting Lenders"), and WELLS FARGO BANK, NATIONAL ASSOCIATION, as administrative agent (the "Administrative Agent"). Unless otherwise indicated, all capitalized terms used herein and not otherwise defined herein shall have the respective meanings provided such terms in the Credit Agreement referred to below.

W I T N E S S E T H:

WHEREAS, the Borrower, the lenders party thereto from time to time (the "Lenders") and the Administrative Agent have entered into that certain Amended and Restated Credit Agreement, dated as of October 15, 2018 (as amended by the First Amendment to Amended and Restated Credit Agreement dated as of June 27, 2019, as further amended by the Second Amendment to Amended and Restated Credit Agreement dated as of August 7, 2020 and as may further be amended, supplemented or otherwise modified prior to the date hereof, the "Credit Agreement");

WHEREAS, pursuant to the terms of Section 8.1(a) of the Credit Agreement, within ninety (90) days of the end of the fiscal year ending December 31, 2022, the Borrower is required to deliver to the Administrative Agent, a consolidated balance sheet of the Borrower and its Subsidiaries as at the end of such fiscal year, and the related consolidated statements of income or operations, changes in shareholders' equity, and cash flows for such fiscal year, setting forth in each case in comparative form the figures for the previous fiscal year, all in reasonable detail and prepared in accordance with GAAP, audited and accompanied by a report of an independent certified public accountant of nationally recognized standing, which report (a) shall be prepared in accordance with generally accepted auditing standards and (b) shall not be subject to any "going concern" or like qualification or exception or any qualification or exception as to the scope of such audit (this clause (b), the "Going Concern Requirement") (collectively, the "2022 Financials");

WHEREAS, pursuant to the terms of Section 8.1(c) of the Credit Agreement, within forty-five (45) days of the beginning of the fiscal year ending December 31, 2023, the Borrower is required to deliver an annual business plan and budget of the Borrower and its Subsidiaries on a consolidated basis for such fiscal year prepared by management, in form reasonably satisfactory to the Administrative Agent (the "2023 Budget Requirement");

WHEREAS, pursuant to the terms of Section 9.11 of the Credit Agreement, the Borrower is required to comply with the minimum Consolidated Debt Service Coverage Ratio and maximum Consolidated Net Leverage Ratio set forth therein (collectively, the "Financial Covenants") as of the last day of the applicable Measurement Period;

WHEREAS, the Borrower has notified the Lenders and the Administrative Agent that certain of its subsidiaries (the "Project Emerald Sellers") disclosed to the Lenders and the Administrative Agent, intend to dispose of certain assets disclosed to the Lenders and the Administrative Agent (collectively, "Project Emerald Transaction") on substantially the same terms set forth in the Purchase and Sale Agreement provided to counsel to the Administrative Agent on February 13, 2023 (the "Reviewed Purchase Agreement"); and

WHEREAS, pursuant to Section 12.2 of the Credit Agreement, the Borrower has requested, and subject to the terms and conditions set forth herein, the Administrative Agent and the Required Lenders have agreed, to the consent described in Section 1 hereof, the limited waiver described in Section 2 hereof, and the amendments to the Credit Agreement set forth in Section 3 hereof.

NOW, THEREFORE, in consideration of the foregoing and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, it is agreed as follows:

SECTION 1. Consent. Subject to the terms and conditions set forth herein and in reliance upon the representations and warranties set forth herein, the Lenders constituting the Required Lenders hereby acknowledge and consent (a) to the consummation of the Project Emerald Transaction (including, for the avoidance of doubt, any mergers or investments consummated in connection therewith) substantially in accordance with the terms of the Reviewed Purchase Agreement, as amended, restated, amended and restated, supplemented and/or otherwise modified from time to time, but without giving effect to any amendment, waiver or consent by the Borrower and/or any affiliate thereof that is materially adverse to the interests of the Lenders without the consent of the Required Lenders; provided that the Net Cash Proceeds of not less than $270,000,000.00 from the Project Emerald Transaction (plus or minus any working capital adjustment made in accordance with the Reviewed Purchase Agreement; provided that the aggregate amount of any reduction resulting from the working capital adjustment shall not exceed [...]) shall be promptly deposited into a cash collateral account with the Administrative Agent that is a Controlled Account (the "Emerald Collateral Account") and shall, unless otherwise agreed to in writing by the Borrower and the Required Lenders, be immediately applied to repay the outstanding Term Loans in accordance with Section 4.4(b)(iv) of the Credit Agreement on the expiration of the Limited Waiver Period, and (b) to the receipt of the projections delivered to the Lenders on February 9, 2023 in satisfaction of the 2023 Budget Requirement. The Administrative Agent hereby appoints, authorizes and directs any Lender with whom any deposit account is maintained to act as collateral sub-agent for the Administrative Agent, the Lenders and the Issuing Lenders for purposes of the perfection of all Liens with respect to any such account, and may further authorize and direct such Lender to take further actions as collateral sub-agent for purposes of enforcing such Liens, and each such Lender hereby accepts such appointment and agrees to take such further actions to the extent, and only to the extent, so authorized and directed.

SECTION 2. Limited Waiver. Subject to the terms and conditions set forth herein and in reliance upon the representations and warranties set forth herein, the Lenders constituting the Required Lenders hereby agree to (x) temporarily waive any Default or Event of Default arising from Borrower's non-compliance with the Going Concern Requirement with respect to the 2022 Financials and (y) temporarily waive any Default or Event of Default arising from Borrower's non-compliance with the Financial Covenants for the fiscal quarters ending December 31, 2022 and March 31, 2023, in each case during the period (the "Limited Waiver Period") commencing on the Consent and Limited Waiver Effective Date (defined below) and ending on the earlier to occur of (i) an Event of Default other than the defaults identified in clauses (x) and (y) above and (ii) April 17, 2023, as such date may be extended in writing by the Borrower and the Required Lenders.

SECTION 3. Amendments to Credit Agreement. Subject to and in accordance with the terms and conditions set forth herein, the parties hereto agree that the Credit Agreement is amended as follows:

(a) The definition of "Applicable Margin" in Section 1.1 of the Credit Agreement is hereby amended by adding the following additional paragraph after the final sentence therein:

> *Notwithstanding the foregoing, in the event that any financial statement or Compliance Certificate delivered pursuant to Section 8.1 or 8.2(a) is shown to be inaccurate (regardless of whether (i) this Agreement is in effect, (ii) any Commitments are in effect, or (iii) any Extension of Credit is outstanding when such inaccuracy is discovered or such financial statement or Compliance Certificate was delivered), and such inaccuracy, if corrected, would have led to the application of a higher Applicable Margin for any period (an "Applicable Period") than the Applicable Margin applied for such Applicable Period, then (A) the Borrower shall immediately deliver to the Administrative Agent a corrected Compliance Certificate for such Applicable Period, (B) the Applicable Margin for such Applicable Period shall be determined as if the Consolidated Net Leverage Ratio in the*

corrected Compliance Certificate were applicable for such Applicable Period, and (C) the Borrower shall immediately and retroactively be obligated to pay to the Administrative Agent the accrued additional interest and fees owing as a result of such increased Applicable Margin for such Applicable Period, which payment shall be promptly applied by the Administrative Agent in accordance with Section 5.4. Nothing in this paragraph shall limit the rights of the Administrative Agent and Lenders with respect to Sections 5.1(b) and 10.2 nor any of their other rights under this Agreement or any other Loan Document. The Borrower's obligations under this paragraph shall survive the termination of the Commitments and the repayment of all other Obligations hereunder. The Applicable Margin with respect to any Incremental Term Loan shall be set forth in the applicable Incremental Facility Amendment.

(b) Article I of the Credit Agreement is hereby amended by adding the following defined terms in appropriate alphabetical order:

"Limited Waiver Period" has the meaning set forth in the Third Amendment.

"Third Amendment" means that certain Consent, Limited Waiver and Third Amendment to Amended and Restated Credit Agreement, dated as of February 14, 2023, among the Borrower, the Guarantors, the Lenders party thereto and the Administrative Agent.

(c) Section 2.1 of the Credit Agreement is hereby amended by amending and restating the proviso at the end of the first sentence thereof to read as follows:

provided, that (a) the Revolving Credit Outstandings shall not exceed the Revolving Credit Commitment, (b) the Revolving Credit Exposure of any Revolving Credit Lender shall not at any time exceed such Revolving Credit Lender's Revolving Credit Commitment, (c) the aggregate principal amount of all outstanding Revolving Credit Loans denominated in Alternative Currencies and Letters of Credit denominated in Alternative L/C Currencies shall not exceed the Alternative Currency Sublimit and (d) notwithstanding anything to the contrary herein, the Revolving Credit Lenders shall not be required to make any Revolving Credit Loans during the Limited Waiver Period.

(d) Section 4.4(b)(ii) of the Credit Agreement is hereby amended by amending and restating the proviso at the end thereof to read as follows:

provided further that, other than during the Limited Waiver Period and so long as no Event of Default has occurred and is continuing, no prepayment shall be required under this Section 4.4(b)(ii) with respect to (x) such portion of such Net Cash Proceeds that the Borrower shall have, on or prior to such date given written notice to the Administrative Agent of its intent to reinvest in accordance with Section 4.4(b)(iii) and (y) Dispositions with aggregate Net Cash Proceeds not to exceed [...] during the term of this Agreement.

(e) Sections 4.4(b)(iii) and 4.4(b)(v) of the Credit Agreement are hereby amended by amending and restating the phrase "*so long as no Event of Default has occurred and is continuing*" in the first sentence thereof to read as follows: "*other than during the Limited Waiver Period and so long as no Event of Default has occurred and is continuing*".

(f) Section 5.2 of the Credit Agreement is hereby amended by amending and restating the phrase "*Provided that no Default or Event of Default has occurred and is then continuing*" in the first sentence thereof to read as follows: "*Other than during the Limited Waiver Period if the resulting Interest Period for the applicable Eurocurrency Rate Loan would expire after April 9, 2023, and provided that no Default or Event of Default has occurred and is then continuing*".

(g) Clause (b) in the first sentence of Section 8.10 of the Credit Agreement is hereby amended and restated in its entirety to read as follows:

> *(b) during the Limited Waiver Period or when an Event of Default exists the Administrative Agent or any Lender (or any of their respective representatives or independent contractors) may do any of the foregoing at the expense of the Borrower at any time during normal business hours and without advance notice*

(h) Section 8.12(c) of the Credit Agreement is hereby amended by amending and restating the proviso at the end thereof to read as follows:

> *provided that (i) no such release is permitted during the Limited Waiver Period, (ii) immediately before and after such release, no Default or Event of Default shall have occurred and be continuing and (iii) all outstanding Investments made by the Borrower and its Subsidiaries in such Immaterial Subsidiary as of such date of release shall be deemed to have been made under Section 9.2(c)(iv).*

(i) Sections 9.2(g), 9.2(i), 9.3(h), 9.5(g), 9.6(k), 9.14(c), and 9.14(f) of the Credit Agreement are hereby amended by adding the following language at the beginning of each such Section: "*other than during the Limited Waiver Period,*".

(j) Sections 9.4(e) and 9.6(d) of the Credit Agreement are hereby amended by adding the following language at the beginning of each such Section: "*other than during the Limited Waiver Period and*".

(k) Section 9.6(c) of the Credit Agreement is hereby amended by amending and restating the phrase "*so long as no Default or Event of Default shall occurred and be continuing*" in the first sentence thereof to read as follows: "*other than during the Limited Waiver Period and so long as no Default or Event of Default shall have occurred and be continuing*".

(l) Section 10.2(a) of the Credit Agreement is hereby amended by deleting the reference therein to "*Section 10.1(i) or (j)*" and replacing such reference with "*Section 10.1(f) and (g)*".

SECTION 4. Conditions of Effectiveness of Consent and Limited Waiver. This Consent and Limited Waiver, and the consent set forth in Section 1 above, the limited waiver set forth in Section 2 above and the amendments set forth in Section 3 above, shall become effective on the date (such date, the "Consent and Limited Waiver Effective Date") when the Administrative Agent shall have received (i) this Consent and Limited Waiver, duly executed by a Responsible Officer of the Borrower, the Guarantors existing as of the Consent and Limited Waiver Effective Date, the Administrative Agent and the Required Lenders, (ii) payment of the Consent and Limited Waiver Fee (defined below), and (iii) payment of the reasonable fees, charges and disbursements of McGuireWoods LLP, counsel for the Administrative Agent and of RPA Advisors, LLC, financial advisor engaged on behalf of the Administrative Agent.

SECTION 5. Control Agreements. Notwithstanding anything to the contrary contained in the Credit Agreement or any other Loan Document, by no later than April 17, 2023, the Credit Parties shall deliver to the Administrative Agent customary Account Control Agreements in favor of the Administrative Agent with respect to their Deposit Accounts (as defined in the Collateral Agreement) other than those Deposit Accounts that constitute Excluded Deposit Accounts (as defined in the Collateral Agreement) pursuant to clauses (a), (b), (c), (e) and (f) of the definition thereof.

SECTION 6. Fee. In consideration of the willingness of the Lenders to enter into this Consent and Limited Waiver, on the Consent and Limited Waiver Effective Date, the Borrower shall pay to the Administrative Agent, for the ratable benefit of each Consenting Lender, a fee in an aggregate amount equal to [...] of the Lenders as of the Consent and Limited Waiver Effective Date

(the "Consent and Limited Waiver Fee"). The Consent and Limited Waiver Fee shall be shared by the Consenting Lenders on a pro rata basis and shall be fully earned, non-refundable, and due and payable in immediately available funds on the Consent and Limited Waiver Effective Date.

SECTION 7. Representations and Warranties. To induce the Administrative Agent and the Lenders to enter into this Consent and Limited Waiver, each Credit Party represents and warrants to the Administrative Agent and the Lenders on and as of the Consent and Limited Waiver Effective Date that, in each case:

(a) the representations and warranties of each Credit Party set forth in the Credit Agreement and in each other Loan Document to which it is a party are true and correct in all material respects on and as of the Consent and Limited Waiver Effective Date with the same effect as though made on and as of such date, except to the extent such representations and warranties expressly relate to an earlier date, in which case they shall be true and correct in all material respects as of such earlier date; provided that any representation and warranty that is qualified as to "materiality," "Material Adverse Effect" or similar language shall be true and correct (after giving effect to any qualification therein) in all respects on such respective dates;

(b) except as described in this Consent and Limited Waiver, no Default or Event of Default has occurred and is continuing;

(c) it has all requisite power and authority and has taken all necessary corporate and other action to authorize the execution, delivery and performance of this Consent and Limited Waiver and each other document executed in connection herewith to which it is a party in accordance with their respective terms and the transactions contemplated hereby; and

(d) this Consent and Limited Waiver and each other document executed in connection herewith has been duly executed and delivered by the duly authorized officers of each Credit Party, and each such document constitutes the legal, valid and binding obligation of each such Credit Party, enforceable in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or other laws affecting creditors' rights generally and subject to general principals of equity.

SECTION 8. General Release.

(a) In consideration of, among other things, Administrative Agent's and the Consenting Lenders' execution and delivery of this Consent and Limited Waiver, each of Borrower and the other Credit Parties, on behalf of itself and its Related Parties, successors and assigns (collectively, "Releasors"), hereby forever agrees and covenants not to sue or prosecute against any Releasee (as hereinafter defined) and hereby forever waives, releases and discharges, to the fullest extent permitted by law, each Releasee from any and all claims (including, without limitation, crossclaims, counterclaims, rights of set-off and recoupment), actions, causes of action, suits, debts, accounts, interests, liens, promises, warranties, damages and consequential damages, demands, agreements, bonds, bills, specialties, covenants, controversies, variances, trespasses, judgments, executions, costs, expenses or claims whatsoever, that such Releasor now has or hereafter may have, of whatsoever nature and kind, whether known or unknown, whether now existing or hereafter arising, whether arising at law or in equity (collectively, the "Claims"), against the Administrative Agent (and any sub-agent thereof), each Lender and each Issuing Lender and their respective Related Parties, and their respective successors and assigns (collectively, the "Releasees"), based in whole or in part on facts, whether or not now known, existing on or before the Consent and Limited Waiver Effective Date, that relate to, arise out of or otherwise are in connection with: (i) any or all of the Loan Documents or transactions contemplated thereby or any actions or omissions in connection therewith, or (ii) any aspect of the dealings or relationships between or among Borrower and the other Credit Parties, on the one hand, and any or all of the Administrative Agent, the Lenders and the Issuing Lenders, on the other hand, relating to any or all of the documents, transactions, actions or omissions referenced in clause (i) hereof. In entering into this Agreement, Borrower and each other Credit Party consulted with, and has been represented by, legal counsel and expressly disclaims any reliance on any representations, acts or

omissions by any of the Releasees and hereby agrees and acknowledges that the validity and effectiveness of the releases set forth above do not depend in any way on any such representations, acts and/or omissions or the accuracy, completeness or validity thereof.

(b) Each of Borrower and other Credit Parties, on behalf of itself and its Related Parties and its successors, assigns, hereby absolutely, unconditionally and irrevocably, covenants and agrees with and in favor of each Releasee that it will not sue (at law, in equity, in any regulatory proceeding or otherwise) any Releasee on the basis of any Claim released, remised and discharged by Borrower or any other Credit Party pursuant to Section 8(a) hereof. If Borrower, any other Credit Party or any of its successors, assigns or other legal representatives violates the foregoing covenant, Borrower and other Credit Parties, each for itself and its successors, assigns and legal representatives, agrees to pay, in addition to such other damages as any Releasee may sustain as a result of such violation, all attorneys' fees and costs incurred by any Releasee as a result of such violation.

(c) Each party's obligations under this Section shall survive the termination of the Loan Documents and payment of the obligations thereunder.

SECTION 9. Reference to and Effect on the Credit Agreement and the Loan Documents. Except as expressly provided herein, the Credit Agreement and the other Loan Documents shall remain unmodified and in full force and effect. This Consent and Limited Waiver shall not be deemed (a) to be a waiver of, or consent to, or a modification or amendment of, any other term or condition of the Credit Agreement or any other Loan Document other than as expressly set forth herein, (b) to prejudice any right or rights which the Administrative Agent or the Lenders may now have or may have in the future under or in connection with the Credit Agreement or the other Loan Documents or any of the instruments or agreements referred to therein, as the same may be amended, restated, supplemented or modified from time to time, or (c) to be a commitment or any other undertaking or expression of any willingness to engage in any further discussion with the Borrower, any of its Subsidiaries or any other Person with respect to any other waiver, amendment, modification or any other change to the Credit Agreement or the Loan Documents or any rights or remedies arising in favor of the Lenders or the Administrative Agent, or any of them, under or with respect to any such documents. References in the Credit Agreement to "this Agreement" (and indirect references such as "hereunder", "hereby", "herein", "hereof" or other words of like import) and in any Loan Document to the "Credit Agreement" shall be deemed to be references to the Credit Agreement as modified hereby.

SECTION 10. Acknowledgement and Reaffirmation. Each Credit Party (a) consents to this Consent and Limited Waiver and agrees that the transactions contemplated by this Consent and Limited Waiver shall not limit or diminish the obligations of such Person under, or release such Person from any obligations under, any of the Loan Documents to which it is a party (as amended pursuant to this Consent and Limited Waiver), (b) confirms and reaffirms its obligations under each of the Loan Documents to which it is a party (as amended pursuant to this Consent and Limited Waiver) and (c) agrees that each of the Loan Documents to which it is a party (as amended pursuant to this Consent and Limited Waiver) remains in full force and effect and is hereby ratified and confirmed.

SECTION 11. Costs and Expenses. The Borrower hereby reconfirms its obligations pursuant to Section 12.3(a) of the Credit Agreement to pay and reimburse the Administrative Agent in accordance with the terms thereof.

SECTION 12. Governing Law. THIS CONSENT AND LIMITED WAIVER SHALL BE GOVERNED BY, AND CONSTRUED IN ACCORDANCE WITH, THE LAWS OF THE STATE OF NEW YORK.

SECTION 13. Counterparts. This Consent and Limited Waiver may be executed in any number of counterparts and by the different parties hereto on separate counterparts, each of which counterparts when executed and delivered shall be an original, but all of which shall together constitute one and the same instrument.

Delivery by facsimile or electronic transmission of an executed counterpart of a signature page to this Consent and Limited Waiver shall be effective as delivery of an original executed counterpart of this Consent and Limited Waiver.

SECTION 14. Entire Agreement. This Consent and Limited Waiver is the entire agreement, and supersedes any prior agreements and contemporaneous oral agreements, of the parties concerning its subject matter. This Consent and Limited Waiver is a Loan Document and is subject to the terms and conditions of the Credit Agreement.

SECTION 15. Successors and Assigns. This Consent and Limited Waiver shall be binding on and inure to the benefit of the parties hereto and their successors and permitted assigns.

[The remainder of this page is intentionally left blank.]

IN WITNESS WHEREOF, the parties hereto have caused their duly authorized officers to execute and deliver this Consent and Limited Waiver as of the date first above written.

EMERGENT BIOSOLUTIONS INC., as Borrower

By: _____
Name: Richard S. Lindahl
Title: Executive Vice President, Chief Financial Officer and Treasurer

CANGENE BIOPHARMA LLC, as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Treasurer

EMERGENT BIODEFENSE OPERATIONS LANSING LLC, as Guarantor,

By: _____
Name: Richard S. Lindahl
Title: Treasurer

EMERGENT MANUFACTURING OPERATIONS BALTIMORE LLC, as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Executive Manager

EMERGENT PRODUCT DEVELOPMENT GAITHERSBURG INC., as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Treasurer

EMERGENT INTERNATIONAL INC., as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Treasurer

EMERGENT TRAVEL HEALTH INC., as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Chief Financial Officer and Treasurer

EMERGENT DEVICES INC. (FORMERLY KNOWN AS ADAPT PHARMA INC.), as Guarantor

By: _____
Name: Richard S. Lindahl
Title: Treasurer

WELLS FARGO BANK, NATIONAL ASSOCIATION, as Administrative Agent, Swingline Lender, Issuing Lender and Lender

By: _____

Name: Troy Jefferson
Title: Senior Vice President

JPMORGAN CHASE BANK, N.A., as Lender

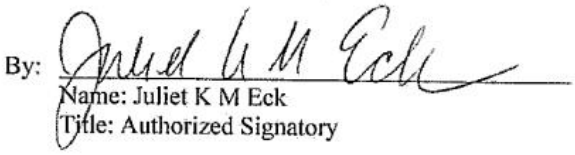
By: 

Name: Ling Li
Title: Executive Director

PNC BANK, NATIONAL ASSOCIATION, as Lender

By: _____
Name: Alison J. Ford
Title: Senior Vice President

ROYAL BANK OF CANADA, as Lender

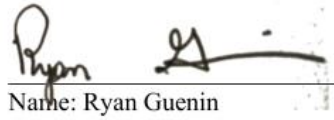
By: 
Name: Juliet K M Eck
Title: Authorized Signatory

BMO HARRIS BANK N.A., as Lender

By: 

Name: David Check
Title: Managing Director

CAPITAL ONE, N.A., as Lender

By: 

Name: Ryan Guenin
Title: Duly Authorized Signatory

CITIZENS BANK, N.A., as Lender

by 
Name: Michael Flynn
Title: Senior Vice President

REGIONS BANK, as Lender

By: 

Name: Robert Hawkins

Title: SVP

TRUIST BANK as Successor by Merger to SunTrust Bank, as Lender

By: _____

Name: JUAN DE JESUS CABALLERO

Title: SENIOR VICE PRESIDENT

TD BANK, N.A., as a Lender

By: _____

Name: Bernadette Collins
Title: Senior Vice President

BANK OF AMERICA, N.A., as Lender

By: 

Name: Huan Z. Long
Title: Senior Vice President

BMO HARRIS BANK N.A., successor by merger to BANK OF THE WEST, as a Lender

By: 

Name: Ron Freed
Title: Vice President

DNB CAPITAL LLC, as a Lender

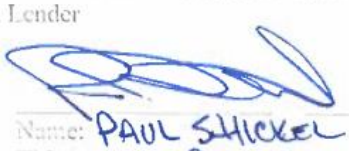
By: 

Name: Dania Hinedi
Title: Senior Vice President
(347) 843-2141

By: 

Name: Bret Douglas
Title: Senior Vice President

FIRST NATIONAL BANK OF PENNSYLVANIA,
as a Lender

By: 

Name: PAUL SHICKEL
Title: VICE PRESIDENT

FIFTH THIRD BANK, N.A., as a Lender

By: Brad McDougall

Name: Brad McDougall
Title: Vice President

HSBC BANK USA, N.A., as a Lender

By: _____

Name: Alyssa Champion (Feb 14, 2023 13:01 EST)
Title: Senior Vice President

U.S. BANK NATIONAL ASSOCIATION, as a Lender

By: Karen Boyer

Name: Karen Boyer
Title: Senior Vice President

M&T BANK, as a Lender

By: _____

Name: FRANCIS BALLARD

Title: SENIOR VICE PRESIDENT

EMERGENT BIOSOLUTIONS INC. AMENDED AND RESTATED STOCK INCENTIVE PLAN

1. Purpose

The purpose of this Amended and Restated Stock Incentive Plan (the "Plan") of Emergent BioSolutions Inc., a Delaware corporation (the "Company"), is to advance the interests of the Company's stockholders by enhancing the Company's ability to attract, retain and motivate persons who are expected to make important contributions to the Company and by providing such persons with equity ownership opportunities and performance-based incentives that are intended to align their interests with those of the Company's stockholders. The Plan amends and restates the 2006 Stock Incentive Plan (the "Original Plan") that was originally adopted by the board of directors of the Company (the "Board") on October 25, 2006 and approved by the stockholders on October 27, 2006, was amended by the Board on March 31, 2009 and approved by the stockholders on May 21, 2009, was amended by the Board on March 6, 2012 and approved by the stockholders on May 17, 2012, was amended by the Board on March 20, 2014 and approved by the stockholders on May 22, 2014, was amended by the Board on March 24, 2016 and approved by our stockholders on May 19, 2016, was amended by the Board on March 22, 2018 and approved by our stockholders on May 24, 2018, and was amended by the Board on March 18, 2021 and approved by our stockholders on May 20, 2021.January 4, 2023, effective as of January 5, 2023. Except where the context otherwise requires, the term "Company" shall include any of the Company's present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Internal Revenue Code of 1986, as amended, and any regulations promulgated thereunder (the "Code") and any other business venture (including, without limitation, joint venture or limited liability company) in which the Company has a controlling interest, as determined by the Board. Awards granted on or before January 4, 2023 will continue to be governed by the terms of the Plan that were in effect on their respective grant date; provided, however, that the Board's acceleration authority under Section 10(h) shall apply to such awards; and provided further that the minimum vesting requirements that apply to such awards shall be the minimum vesting requirements provided under Sections 5(d), 6(d), 7(b), 8 and 10(i) of this amended and restated Plan document, and not the minimum vesting condition that applied to the awards when they were originally granted.

2. Eligibility

All of the Company's employees, officers, directors, consultants and advisors to the Company (as such terms consultants and advisors are defined and interpreted for purposes of Form S-8 under the Securities Act of 1933, as amended (the "Securities Act"), or any successor form) are eligible to receive options, stock appreciation rights, restricted stock, restricted stock units and other stock-unit awards (each, an "Award") under the Plan. Each person who receives an Award under the Plan is deemed a "Participant". All of the terms and conditions of each Award shall be set forth in an Award agreement.

3. Administration and Delegation

(a) Administration by Board of Directors. The Plan will be administered by the Board. The Board shall have authority to grant Awards and to adopt, amend and repeal such administrative rules, guidelines and practices relating to the Plan as it shall deem advisable. The Board may

construe and interpret the terms of the Plan and any Award agreements entered into under the Plan. The Board may correct any defect, supply any omission or reconcile any inconsistency in the Plan or any Award in the manner and to the extent it shall deem expedient to carry the Plan into effect and it shall be the sole and final judge of such expediency. All decisions by the Board shall be made in the Board's sole discretion and shall be final and binding on all persons having or claiming any interest in the Plan or in any Award. No director or person acting pursuant to the authority delegated by the Board shall be liable for any action or determination relating to or under the Plan made in good faith.

(b) Appointment of Committees. To the extent permitted by applicable law, the Board may delegate any or all of its powers under the Plan to one or more committees or subcommittees of the Board (a "Committee"). All references in the Plan to the "Board" shall mean the Board or a Committee of the Board or the officers referred to in Section 3(c) to the extent that the Board's powers or authority under the Plan have been delegated to such Committee or officers.

(c) Delegation to Officers. Subject to any requirements of applicable law (including as applicable Sections 152 and 157(c) of the General Corporation Law of the State of Delaware), the Board may delegate to one or more officers of the Company the power to grant Awards (subject to any limitations under the Plan) to employees or officers of the Company and to exercise such other powers under the Plan as the Board may determine, provided that the Board shall fix the terms of Awards to be granted by such officers, the maximum number of shares subject to Awards that the officers may grant, and the time period in which such Awards may be granted; and provided further, that no officer shall be authorized to grant Awards to any "executive officer" of the Company (as defined by Rule 3b-7 under the Securities Exchange Act of 1934, as amended (the "***Exchange Act***")) or to any "officer" of the Company (as defined by Rule 16a-1(f) under the Exchange Act).

(d) Awards to Non-Employee Directors. Awards made to non-employee directors will be granted and administered by a Committee, all of the members of which are independent directors as defined by Section 303A.02 of the New York Stock Exchange Listed Company Manual.

4. Stock Available for Awards.

(a) Maximum Number of Shares. An aggregate of 3,500,000 shares of common stock, $0.001 par value per share, of the Company (the "Common Stock" shall be added to the 21,928,826 shares issuable or transferable under the Plan as of March 17, 2021 for a total of 25,428,826 shares.

If any Award expires or is terminated, surrendered or canceled without having been fully exercised or is forfeited in whole or in part (including as the result of shares of Common Stock subject to such Award being repurchased by the Company at the original issuance price pursuant to a contractual repurchase right), is settled in cash, or results in any shares of Common Stock not being issued, the unused shares of Common Stock covered by such Award shall again be available for the grant of Awards under the Plan. Shares of Common Stock delivered (either by actual delivery, attestation or net exercise) to the Company by a Participant to (i) purchase shares of Common Stock upon the exercise of an Award or (ii) satisfy tax withholding obligations with respect to Options and Stock Appreciation Rights (including shares retained from the Option or Stock

Appreciation Right creating the tax obligation) shall not be added back to the number of shares available for future grant of Awards (for the avoidance of doubt, shares of Common Stock delivered to the Company by a Participant to satisfy tax withholding obligations with respect to Restricted Stock, Restricted Stock Units and Other Stock Unit Awards (including shares retained from the Restricted Stock, Restricted Stock Unit or Other Stock Unit Award creating the tax obligation) shall be added back to the number of shares available for future grant of Awards). However, in the case of Incentive Stock Options (as hereinafter defined), the foregoing provisions shall be subject to any limitations under the Code. Shares of Common Stock issued under the Plan may consist in whole or in part of authorized but unissued shares or treasury shares. Notwithstanding anything to the contrary herein, with respect to Stock Appreciation Rights settled in shares of Common Stock upon exercise, the aggregate number of shares of Common Stock with respect to which the Stock Appreciation Right is exercised, rather than the number of shares of Common Stock actually issued upon exercise, shall be counted against the number of shares of Common Stock available for Awards under the Plan. In no event shall shares of Common Stock repurchased by the Company on the open market using the proceeds from the exercise of an Award increase the number of shares available for future grant of Awards.

(b) Computing the Total Number of Shares of Common Stock Available Under the Plan. For purposes of computing the maximum aggregate number of shares of Common Stock available for issuance under the Plan, the following rules shall apply:

(i) Any shares of Common Stock made subject to Awards of Options or Stock Appreciation Rights shall be counted against the maximum aggregate number of shares of Common Stock available for issuance under the Plan as one (1) share of Common Stock for every one (1) share of Common Stock granted.

(ii) Any shares of Common Stock made subject to Awards of Options or Stock Appreciation Rights which shares are returned to the Plan pursuant to Section 4(a) shall be returned as one (1) share of Common Stock for every one (1) share of Common Stock granted.

(iii) Any shares of Common Stock made subject to a Full-Value Award (as defined below): (A) granted prior to May 21, 2009, shall be counted against the maximum aggregate number of shares of Common Stock available for issuance under the Plan as one (1) share of Common Stock for every one (1) share of Common Stock granted; (B) granted on or after May 21, 2009 but prior to May 17, 2012, shall be counted against the maximum aggregate number of shares of Common Stock available for issuance under the Plan as 1.5 shares of Common Stock for every one (1) share of Common Stock granted; (C) granted on or after May 17, 2012 but prior to May 22, 2014, shall be counted against the maximum aggregate number of shares of Common Stock available for issuance under the Plan as 1.86 shares of Common Stock for every one (1) share of Common Stock granted; and (D) granted on or after May 22, 2014, shall be counted against the maximum aggregate number of shares of Common Stock available for issuance under the Plan as 2.3 shares of Common Stock for every one (1) share of Common Stock granted. A "Full-Value Award" is an Award of Restricted Stock, a Restricted Stock Unit Award, an Other Stock Unit Award or a Performance Award (as defined below).

(iv) Any shares of Common Stock made subject to a Full-Value Award which shares are returned to the Plan pursuant to Section 4(a): (A) shall be returned as one (1) share of

Common Stock for every one (1) share of Common Stock granted prior to May 21, 2009; (B) shall be returned as 1.5 shares of Common Stock for every one (1) share of Common Stock granted on or subsequent to May 21, 2009 and prior to May 17, 2012; (C) shall be returned as 1.86 shares of Common Stock for every one (1) share of Common Stock granted on or subsequent to May 17, 2012 and prior to May 22, 2014. Beginning on May 22, 2014, any shares of Common Stock subject to a Full-Value Award that are returned to the Plan will be returned as 2.3 shares of Common Stock for every one (1) share of Common Stock subject to such Award, regardless of when the Award was granted.

(c) Sublimits.

(i) Per Participant Limit. The maximum number of shares of Common Stock with respect to which Awards may be granted to any Participant under the Plan shall be 1,000,000 per calendar year. For purposes of the foregoing limit, the combination of an Option in tandem with a SAR (as each is hereafter defined) shall be treated as a single Award. For the avoidance of doubt, all shares of Common Stock underlying Awards granted under the Plan shall be counted on a one-for-one basis for purposes of the sublimit set forth in this section.

(ii) Limit Applicable to Non-Employee Directors. In any calendar year, the sum of cash compensation paid to any non-employee director for service as a director and the value of Awards under the Plan made to such non-employee director (calculated based on the grant date fair value of such Awards for financial reporting purposes) shall not exceed $1,000,000.

(d) Substitute Awards. In connection with a merger or consolidation of an entity with the Company or the acquisition by the Company of property or stock of an entity, the Board may grant Awards in substitution for any options or other stock or stock unit awards granted by such entity or an affiliate thereof. Substitute Awards may be granted on such terms as the Board deems appropriate in the circumstances, notwithstanding any limitations on Awards contained in the Plan, including provisions that preserve the aggregate option spread as of the closing date of any such transaction in a manner that complies with Section 409A of the Code. Substitute Awards shall not count against the overall share limit set forth in Section 4(a), except as may be required by reason of Section 422 and related provisions of the Code.

5. Stock Options

(a) General. The Board may grant options to purchase Common Stock (each, an "Option") and determine the number of shares of Common Stock to be covered by each Option, the exercise price of each Option and the conditions and limitations applicable to the exercise of each Option, including conditions relating to applicable federal or state securities laws, as it considers necessary or advisable. An Option that is not intended to be an Incentive Stock Option (as hereinafter defined) shall be designated a "Nonstatutory Stock Option".

(b) Incentive Stock Options. An Option that the Board intends to be an "incentive stock option" as defined in Section 422 of the Code (an "Incentive Stock Option") shall only be granted to employees of Emergent BioSolutions Inc., any of Emergent BioSolutions Inc.'s present or future parent or subsidiary corporations as defined in Sections 424(e) or (f) of the Code, and any other entities the employees of which are eligible to receive Incentive Stock Options under the

Code, and shall be subject to and shall be construed consistently with the requirements of Section 422 of the Code. The Company shall have no liability to a Participant, or any other party, if an Option (or any part thereof) that is intended to be an Incentive Stock Option is not an Incentive Stock Option or for any action taken by the Board, including without limitation the conversion of an Incentive Stock Option to a Nonstatutory Stock Option.

(c) Exercise Price. The Board shall establish the exercise price of each Option and specify such exercise price in the applicable option agreement; provided, however, that the exercise price shall not be less than 100% of the Fair Market Value (as defined below) on the date the Option is granted. If a Participant owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than 10% of the combined voting power of all classes of stock of the Company, and an Incentive Stock Option is granted to such Participant, the exercise price of such Incentive Stock Option shall not be less than 110% of the Fair Market Value on the grant date. Notwithstanding the foregoing, Options may be granted with a per Share exercise price other than as required above as a substitution for a stock option or stock appreciation right in accordance with and pursuant to Section 424 of the Code, in the case of an Incentive Stock Option, and pursuant to Section 409A of the Code, in the case of an Option not intended to qualify as an Incentive Stock Option (such options, "Non-Qualified Stock Options").

(d) Duration and Vesting of Options. Each Option shall be exercisable at such times and subject to such terms and conditions as the Board may specify in the applicable option agreement subject to the limitations of the Plan; provided, however, that no Option granted before March 6, 2012 will be granted for a term in excess of 10 years and no Option granted on or after March 6, 2012 will be granted for a term in excess of 7 years. Notwithstanding the foregoing, if a Participant owns or is deemed to own (by reason of the attribution rules of Section 424(d) of the Code) more than 10% of the combined voting power of all classes of stock of the Company, and an Incentive Stock Option is granted to such Participant, the term of such Incentive Stock Option shall be no more than five (5) years from the date of grant. Subject to Section 10(h), Options that vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). Notwithstanding the foregoing, the Board or the Committee, either at the time the Option is granted or at any time thereafter, may allow an Option to accelerate and become vested, in whole or in part, prior to the vesting date specified above, in the event of the death or disability of the Participant. Options that do not vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). The foregoing minimum vesting requirements shall not apply to Awards granted, in the aggregate, for up to 5% of the authorized number of shares specified in Section 4(a). For the avoidance of doubt, all shares of Common Stock underlying Awards granted under the Plan shall be counted on a one-for-one basis for purposes of the minimum vesting provision set forth in this section.

(e) Exercise of Option. Options may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board together with payment in full as specified in Section 5(f)

for the number of shares for which the Option is exercised. Subject to Section 10(e), shares of Common Stock subject to the Option will be delivered by the Company following exercise either as soon as practicable.

(f) Payment Upon Exercise. Common Stock purchased upon the exercise of an Option granted under the Plan shall be paid for as follows:

(i) in cash or by check, payable to the order of the Company;

(ii) except as otherwise provided in the applicable option agreement, by (i) delivery of an irrevocable and unconditional undertaking by a creditworthy broker to deliver promptly to the Company sufficient funds to pay the exercise price and any required tax withholding or (ii) delivery by the Participant to the Company of a copy of irrevocable and unconditional instructions to a creditworthy broker to deliver promptly to the Company cash or a check sufficient to pay the exercise price and any required tax withholding; (iii) to the extent provided for in the applicable option agreement or approved by the Board, in its sole discretion, by delivery (either by actual delivery or attestation) of shares of Common Stock owned by the Participant valued at their fair market value as determined by (or in a manner approved by) the Board to be appropriate in a manner consistent with the valuation principles under Sections 409A and 422 of the Code, except as the Board may expressly determine otherwise ("Fair Market Value"), provided (i) such method of payment is then permitted under applicable law, (ii) such Common Stock, if acquired directly from the Company, was owned by the Participant for such minimum period of time, if any, as may be established by the Board in its discretion and (iii) such Common Stock is not subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements; (iv) to the extent permitted by applicable law and provided for in the applicable option agreement or approved by the Board, in its sole discretion, by (a) delivery of a promissory note of the Participant to the Company on terms determined by the Board, or (b) payment of such other lawful consideration as the Board may determine; or (v) by any combination of the above permitted forms of payment.

(g) Limitation on Repricing. Unless such action is approved by the Company's stockholders or is pursuant to Section 9 of the Plan: (i) outstanding Options granted under the Plan may not be amended to provide an exercise price per share that is lower than the then-current exercise price per share of such outstanding Option, (ii) the Board may also not cancel any outstanding option (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having an exercise price per share lower than the then-current exercise price per share of the cancelled option, (iii) the Board may not cancel in exchange for a cash payment any outstanding Option with an exercise price per share above the then-current Fair Market Value or (iv) the Board may not take any other action under the Plan that constitutes a "repricing" under the rules of the New York Stock Exchange ("NYSE").

6. Stock Appreciation Rights

(a) General. A Stock Appreciation Right, or SAR, is an Award entitling the holder, upon exercise, to receive an amount of Common Stock determined by reference to appreciation,

from and after the date of grant, in the fair market value of a share of Common Stock. The date as of which such appreciation or other measure is determined shall be the exercise date.

(b) Grants. Stock Appreciation Rights may be granted in tandem with, or independently of, Options granted under the Plan.

(i) Tandem Awards. When Stock Appreciation Rights are expressly granted in tandem with Options, (i) the Stock Appreciation Right will be exercisable only at such time or times, and to the extent, that the related Option is exercisable (except to the extent designated by the Board in connection with a Reorganization Event or a Change in Control Event) and will be exercisable in accordance with the procedure required for exercise of the related Option; (ii) the Stock Appreciation Right will terminate and no longer be exercisable upon the termination or exercise of the related Option, except to the extent designated by the Board in connection with a Reorganization Event or a Change in Control Event and except that a Stock Appreciation Right granted with respect to less than the full number of shares covered by an Option will not be reduced until the number of shares as to which the related Option has been exercised or has terminated exceeds the number of shares not covered by the Stock Appreciation Right; (iii) the Option will terminate and no longer be exercisable upon the exercise of the related Stock Appreciation Right; and (iv) the Stock Appreciation Right will be transferable only with the related Option. No tandem SAR may have a base amount that is less than 100% of the fair market value of a share of Common Stock on the date of grant. No tandem SAR granted prior to March 6, 2012 may have a term of more than ten (10) years from the date of grant and no tandem SAR granted on or after March 6, 2012 may have a term of more than seven (7) years from the date of grant.

(ii) Independent SARs. A Stock Appreciation Right not expressly granted in tandem with an Option will become exercisable at such time or times, and on such conditions, as the Board may specify in the SAR Award; provided, however, that the base amount specified on the date of grant to calculate appreciation shall be no less than 100% of the fair market value of a share of Common Stock on the date of grant and the maximum term of any Stock Appreciation Right shall (i) with respect to Stock Appreciation Rights granted prior to March 6, 2012, be no more than ten (10) years from the date of grant and (ii) with respect to Stock Appreciation Rights granted on or after March 6, 2012 be no more than seven (7) years from the date of grant.

(c) Exercise. Stock Appreciation Rights may be exercised by delivery to the Company of a written notice of exercise signed by the proper person or by any other form of notice (including electronic notice) approved by the Board, together with any other documents required by the Board.

Vesting. Subject to Section 10(h), Stock Appreciation Rights that vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). Notwithstanding the foregoing, the Board or the Committee, either at the time the Stock Appreciation Right is granted or at any time thereafter, may allow an Stock Appreciation Right to accelerate and become vested, in whole or in part, prior to the vesting date specified above, in the event of the death or disability of the Participant. Stock Appreciation Rights that do not vest solely based on the passage of time shall not vest

prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). The foregoing minimum vesting requirements shall not apply to Awards granted, in the aggregate, for up to 5% of the authorized number of shares specified in Section 4(a). For the avoidance of doubt, all shares of Common Stock underlying Awards granted under the Plan shall be counted on a one-for-one basis for purposes of the minimum vesting provision set forth in this section.

(d) Limitation on Repricing. Unless such action is approved by the Company's stockholders or is pursuant to Section 9 of the Plan: (i) outstanding Stock Appreciation Rights granted under the Plan may not be amended to provide a base price per share that is lower than the then-current base price per share of such outstanding Stock Appreciation Right, (ii) the Board may also not cancel any outstanding stock appreciation right (whether or not granted under the Plan) and grant in substitution therefor new Awards under the Plan covering the same or a different number of shares of Common Stock and having a base price per share lower than the then-current base price per share of the cancelled stock appreciation right, (iii) the Board may not cancel in exchange for a cash payment any outstanding Stock Appreciation Right with a base price per share above the then-current Fair Market Value or (iv) the Board may not take any other action under the Plan that constitutes a "repricing" under the rules of the NYSE.

7. Restricted Stock; Restricted Stock Units

a) General. The Board may grant Awards entitling recipients to acquire shares of Common Stock ("Restricted Stock"), subject to the right of the Company to repurchase all or part of such shares at their issue price or other stated or formula price from the recipient in the event that conditions specified by the Board in the applicable Award are not satisfied prior to the end of the applicable restriction period or periods established by the Board for such Award. Instead of granting Awards for Restricted Stock, the Board may grant restricted stock unit Awards entitling the recipient to receive shares of Common Stock to be delivered at the time such shares of Common Stock vest ("Restricted Stock Units") (Restricted Stock and Restricted Stock Units are each referred to herein as a "Restricted Stock Award").

b) Terms and Conditions for all Restricted Stock Awards. The Board shall determine the terms and conditions of a Restricted Stock Award, including the conditions for vesting and repurchase (or forfeiture) and the issue price, provided that for Restricted Stock Awards granted on or after January 1, 2023, the following minimum vesting provisions shall apply. Subject to Section 10(h), Restricted Stock Awards that vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). Subject to Section 10(h), Restricted Stock Awards that do not vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). Notwithstanding any other provision of the Plan (other than Section

10(i), if applicable), the Board or Committee may, either at the time a Restricted Stock Award is made or at any time thereafter, waive any right to repurchase shares of Common Stock (or waive the forfeiture thereof) or remove or modify the restrictions applicable to the Restricted Stock Award, in whole or in part, in the event of the death or disability of the Participant. The foregoing minimum vesting requirements shall not apply to Awards granted, in the aggregate, for up to 5% of the authorized number of shares specified in Section 4(a). For the avoidance of doubt, all shares of Common Stock underlying Awards granted under the Plan shall be counted on a one-for-one basis for purposes of the minimum vesting provisions set forth in this section.

c) Additional Provisions Relating to Restricted Stock

(i) Dividends. Unless otherwise provided in the applicable Award agreement, any dividends (whether paid in cash, stock or property) declared and paid by the Company with respect to shares of Restricted Stock ("Unvested Dividends") shall be paid to the Participant only if and when such shares become free from the restrictions on forfeitability that apply to such shares. Each payment of Unvested Dividends will be made no later than the end of the calendar year in which the dividends are paid to stockholders of that class of stock or, if later, the 15th day of the third month following the date the shares of Restricted Stock are no longer subject to a substantial risk of forfeiture (*i.e.*, no later than the 15th day of the third month following the date on which the shares of Restricted Stock vest).

(ii) Stock Certificates. The Company may require that any stock certificates issued in respect of shares of Restricted Stock shall be deposited in escrow by the Participant, together with a stock power endorsed in blank, with the Company (or its designee). At the expiration of the applicable restriction periods, the Company (or such designee) shall deliver the certificates no longer subject to such restrictions to the Participant or if the Participant has died, to the beneficiary designated, in a manner determined by the Board, by a Participant to receive amounts due or exercise rights of the Participant in the event of the Participant's death (the "Designated Beneficiary"). In the absence of an effective designation by a Participant, "Designated Beneficiary" shall mean the Participant's estate.

d) Additional Provisions Relating to Restricted Stock Units

(i) Settlement. Upon the vesting of and/or lapsing of any other restrictions (i.e., settlement) with respect to each Restricted Stock Unit, the Participant shall be entitled to receive from the Company such number of shares of Common Stock or an amount of cash equal to the Fair Market Value of such number of shares of Common Stock, as provided in the applicable Award agreement. The Board may, in its discretion, provide that settlement of Restricted Stock Units shall be deferred, on a mandatory basis or at the election of the Participant, to the extent consistent with and permitted by Section 409A of the Code.

(ii) Voting Rights. A Participant shall have no voting rights with respect to any Restricted Stock Units.

(iii) Dividend Equivalents. To the extent provided by the Board, in its sole discretion, a grant of Restricted Stock Units may provide Participants with the right to receive an amount equal to any dividends or other distributions declared and paid on an equal number of outstanding shares of Common Stock ("Dividend Equivalents"). Dividend Equivalents may be settled in cash and/or shares of Common Stock and shall be subject to the same restrictions on transfer and forfeitability as the Restricted Stock Units with respect to which paid, as determined by the Board in its sole discretion, subject in each case to such terms and conditions as the Board shall establish, in each case to be set forth in the applicable Award agreement.

8. Other Stock-Unit Awards

Other Awards of shares of Common Stock, and other Awards that are valued in whole or in part by reference to, or are otherwise based on, shares of Common Stock or other property, may be granted hereunder to Participants ("Other Stock Unit Awards"), including without limitation Awards entitling recipients to receive shares of Common Stock to be delivered in the future. Such Other Stock Unit Awards shall also be available as a form of payment in the settlement of other Awards granted under the Plan or as payment in lieu of compensation to which a Participant is otherwise entitled. Other Stock Unit Awards may be paid in shares of Common Stock or cash, as the Board shall determine. Subject to the provisions of the Plan, the Board shall determine the terms and conditions of each Other Stock Unit Award, including any purchase price applicable thereto, provided that for Other Stock Unit Awards granted on or after January 1, 2023, the following minimum vesting provisions shall apply.

Subject to Section 10(h), Other Stock Unit Awards granted to Participants other than non-employee directors that vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date). Subject to Section 10(h), Other Stock Unit Awards that do not vest solely based on the passage of time shall not vest prior to the first anniversary of the date of grant (or, in the case of Awards to non-employee directors, the earlier of the first anniversary of the date of grant or date of the first annual meeting held after the date of grant, provided that such vesting period may not be less than 50 weeks after grant date).

Notwithstanding any other provision of the Plan (other than Section 10(i), if applicable), the Board or Committee may, either at the time a Stock Unit Award is made or at any time thereafter, waive any right to repurchase shares of Common Stock (or waive the forfeiture thereof) or remove or modify the restrictions applicable to the Stock Unit Award, in whole or in part, in the event of the death or disability of the Participant. The foregoing minimum vesting requirements shall not apply to Awards granted, in the aggregate, for up to 5% of the authorized number of shares specified in Section 4(a)(1). For the avoidance of doubt, all shares of Common Stock underlying Awards granted under the Plan shall be counted on a one-for-one basis for purposes of the minimum vesting provisions set forth in this section.

9. Adjustments for Changes in Common Stock and Certain Other Events

(a) Changes in Capitalization. In the event of any stock split, reverse stock split, stock dividend, recapitalization, combination of shares, reclassification of shares, spin-off or other similar change in capitalization or event, or any dividend or distribution to holders of Common Stock other than an ordinary cash dividend, (i) the number and class of securities available under this Plan, (ii) the limits set forth in Section 4(c), (iii) the share- and per-share provisions and the exercise price of each SAR, (iv) the number of shares subject to and the repurchase price per share subject to each outstanding Restricted Stock Award, and (v) the share- and per-share-related provisions and the purchase price, if any, of each outstanding Other Stock Unit Award, shall be appropriately adjusted by the Company (or substituted Awards may be made, if applicable) to the extent determined by the Board; provided, however, that each adjustment to Non-Qualified Stock Options shall satisfy the requirements of Treasury Regulation § 1.409A-1(b)(5)(v)(D) (or any successor regulation) and each adjustment to Incentive Stock Options shall satisfy the requirements of Treasury Regulation § 1.424-1 (or any successor regulation). Without limiting the generality of the foregoing, in the event the Company effects a split of the Common Stock by means of a stock dividend and the exercise price of and the number of shares subject to any outstanding Options are adjusted as of the date of the distribution of the dividend (rather than as of the record date for such dividend), then optionees who exercise such Options between the record date and the distribution date for such stock dividend shall be entitled to receive, on the distribution date, the stock dividend with respect to the shares of Common Stock acquired upon such Option exercise, notwithstanding the fact that such shares were not outstanding as of the close of business on the record date for such stock dividend.

(b) Reorganization and Change in Control Events

(i) Definitions

(A) A "Reorganization Event" shall mean:

(1) any merger or consolidation of the Company with or into another entity as a result of which all of the Common Stock of the Company is converted into or exchanged for the right to receive cash, securities or other property or is cancelled;

(2) any exchange of all of the Common Stock of the Company for cash, securities or other property pursuant to a share exchange transaction; or

(3) any liquidation or dissolution of the Company.

(B) A "Change in Control Event" shall mean:

(1) the acquisition by an individual, entity or group (within the meaning of Section 13(d)(3) or 14(d)(2) of the Exchange Act) (a "Person") of beneficial ownership of any capital stock of the Company if, after such acquisition, such Person beneficially owns (within the meaning of Rule 13d 3 promulgated under the Exchange Act) 50% or more of either (x) the aggregate number of shares of Common Stock then-outstanding (the "Outstanding Company Common Stock") or (y) the combined voting power of the then-outstanding securities of the Company entitled to vote generally in the election of directors (the "Outstanding Company Voting Securities"); provided, however, that for purposes of this subsection (1), the following acquisitions shall not constitute a Change in Control Event: (A) any acquisition directly from the

Company (excluding an acquisition pursuant to the exercise, conversion or exchange of any security exercisable for, convertible into or exchangeable for common stock or voting securities of the Company, unless the Person exercising, converting or exchanging such security acquired such security directly from the Company or an underwriter or agent of the Company), (B) any acquisition by any employee benefit plan (or related trust) sponsored or maintained by the Company or any corporation controlled by the Company, or (C) any acquisition by any corporation pursuant to a Business Combination (as defined below) which complies with clauses (x) and (y) of subsection (3) of this definition; or

(2) such time as the Continuing Directors (as defined below) do not constitute a majority of the Board (or, if applicable, the Board of Directors of a successor corporation to the Company), where the term "Continuing Director" means at any date a member of the Board (x) who was a member of the Board on the date of the initial adoption of this Plan by the Board or (y) who was nominated or elected subsequent to such date by at least a majority of the directors who were Continuing Directors at the time of such nomination or election or whose election to the Board was recommended or endorsed by at least a majority of the directors who were Continuing Directors at the time of such nomination or election; provided, however, that there shall be excluded from this clause (y) any individual whose initial assumption of office occurred as a result of an actual or threatened election contest with respect to the election or removal of directors or other actual or threatened solicitation of proxies or consents, by or on behalf of a person other than the Board; or (3) the consummation of a merger, consolidation, reorganization, recapitalization or share exchange involving the Company or a sale or other disposition of all or substantially all of the assets of the Company (a "Business Combination"), unless, immediately following such Business Combination, each of the following two conditions is satisfied: (x) all or substantially all of the individuals and entities who were the beneficial owners of the Outstanding Company Common Stock and Outstanding Company Voting Securities immediately prior to such Business Combination beneficially own, directly or indirectly, more than 50% of the then-outstanding shares of common stock and the combined voting power of the then-outstanding securities entitled to vote generally in the election of directors, respectively, of the resulting or acquiring corporation in such Business Combination (which shall include, without limitation, a corporation which as a result of such transaction owns the Company or substantially all of the Company's assets either directly or through one or more subsidiaries) (such resulting or acquiring corporation is referred to herein as the "Acquiring Corporation") in substantially the same proportions as their ownership of the Outstanding Company Common Stock and Outstanding Company Voting Securities, respectively, immediately prior to such Business Combination and (y) no Person (excluding any employee benefit plan (or related trust) maintained or sponsored by the Company or by the Acquiring Corporation) beneficially owns, directly or indirectly, 50% or more of the then-outstanding shares of common stock of the Acquiring Corporation, or of the combined voting power of the then-outstanding securities of such corporation entitled to vote generally in the election of directors (except to the extent that such ownership existed prior to the Business Combination); or

(3) the liquidation or dissolution of the Company.

(C) "Good Reason" shall mean any significant diminution in the Participant's title, authority, or responsibilities from and after such Reorganization Event or Change in Control Event, as the case may be, or any reduction in the annual cash compensation

payable to the Participant from and after such Reorganization Event or Change in Control Event, as the case may be, or the relocation of the place of business at which the Participant is principally located to a location that is greater than 50 miles from its location immediately prior to such Reorganization Event or Change in Control Event.

(D) "Cause" shall mean any (i) willful failure by the Participant, which failure is not cured within 30 days of written notice to the Participant from the Company, to perform his or her material responsibilities to the Company, (ii) willful misconduct by the Participant which affects the business reputation of the Company, (iii) material breach by the Participant of any employment, consulting, confidentiality, non-competition or non-solicitation agreement with the Company, (iv) conviction or plea of nolo contendere (no contest) by the Participant to a felony, or (v) commission by the Participant of any act involving fraud, theft or dishonesty with respect to the Company's business or affairs. The Participant shall be considered to have been discharged for "Cause" if the Company determines, within 30 days after the Participant's resignation, that discharge for Cause was warranted.

(ii) Effect on Options

(A) Reorganization Event. Upon the occurrence of a Reorganization Event (regardless of whether such event also constitutes a Change in Control Event), or the execution by the Company of any agreement with respect to a Reorganization Event (regardless of whether such event will result in a Change in Control Event), the Board shall provide that all outstanding Options shall be assumed, or equivalent options shall be substituted, by the acquiring or succeeding corporation (or an affiliate thereof); provided that if such Reorganization Event also constitutes a Change in Control Event, except to the extent specifically provided to the contrary in the instrument evidencing any Option or any other agreement between a Participant and the Company such assumed or substituted options shall become immediately exercisable in full if, on or prior to the first anniversary of the date of the consummation of the Reorganization Event, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason by the Participant or is terminated without Cause by the Company or the acquiring or succeeding corporation or the Participant's service on the Board is terminated. For purposes hereof, an Option shall be considered to be assumed if, following consummation of the Reorganization Event, the Option confers the right to purchase, for each share of Common Stock subject to the Option immediately prior to the consummation of the Reorganization Event, the consideration (whether cash, securities or other property) received as a result of the Reorganization Event by holders of Common Stock for each share of Common Stock held immediately prior to the consummation of the Reorganization Event (and if holders were offered a choice of consideration, the type of consideration chosen by the holders of a majority of the outstanding shares of Common Stock); provided, however, that if the consideration received as a result of the Reorganization Event is not solely common stock of the acquiring or succeeding corporation (or an affiliate thereof), the Company may, with the consent of the acquiring or succeeding corporation, provide for the consideration to be received upon the exercise of Options to consist solely of common stock of the acquiring or succeeding corporation (or an affiliate thereof) equivalent in value (as determined by the Board) to the per share consideration received by holders of outstanding shares of Common Stock as a result of the Reorganization Event. Any substitution of an outstanding Option under this Section 9(b)(ii)(A) shall be made in a manner consistent with the requirements of Treasury Regulation § 1.409A-1(b)(5)(v)(D) (or any successor

regulation), in the case of a Non-Qualified Stock Option, and Treasury Regulation §1.424-1(a) (or any successor regulations), in the case of an Incentive Stock Option.

Notwithstanding the foregoing, if the acquiring or succeeding corporation (or an affiliate thereof) does not agree to assume, or substitute for, some or all of such Options, or in the event of a liquidation or dissolution of the Company, the Board shall, upon written notice to the Participants, provide with respect to any Options that are not to be assumed by an acquiring or succeeding corporation that all then unexercised Options will become exercisable in full as of a specified time prior to the Reorganization Event and will terminate immediately prior to the consummation of such Reorganization Event, except to the extent exercised by the Participants before the consummation of such Reorganization Event; provided, however, that in the event of a Reorganization Event under the terms of which holders of Common Stock will receive upon consummation thereof a cash payment for each share of Common Stock surrendered pursuant to such Reorganization Event (the "Acquisition Price"), then the Board may instead provide that, subject to Code section 409A, all such outstanding Options shall terminate upon consummation of such Reorganization Event and that each Participant shall receive, in exchange therefor, a cash payment equal to the amount (if any) by which (A) the Acquisition Price multiplied by the number of shares of Common Stock subject to such outstanding Options (whether or not then exercisable), exceeds (B) the aggregate exercise price of such Options and any applicable tax withholdings.

(B) Change in Control Event that is not a Reorganization Event. Upon the occurrence of a Change in Control Event that does not also constitute a Reorganization Event, except to the extent specifically provided to the contrary in the instrument evidencing any Option or any other agreement between a Participant and the Company, then outstanding Options shall continue to become vested in accordance with the original vesting schedule set forth in such Option, provided, however, that each such Option shall be immediately exercisable in full if, on or prior to the first anniversary of the date of the consummation of the Change in Control Event, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason by the Participant or is terminated without Cause by the Company or the acquiring or succeeding corporation.

(iii) Effect on Restricted Stock Awards

(A) Reorganization Event that is not a Change in Control Event. Upon the occurrence of a Reorganization Event that is not a Change in Control Event, the repurchase and other rights of the Company under each outstanding Restricted Stock Award shall inure to the benefit of the Company's successor and shall apply to the cash, securities or other property which the Common Stock was converted into or exchanged for pursuant to such Reorganization Event in the same manner and to the same extent as they applied to the Common Stock subject to such Restricted Stock Award.

(B) Change in Control Event. Upon the occurrence of a Change in Control Event (regardless of whether such event also constitutes a Reorganization Event), except to the extent specifically provided to the contrary in the instrument evidencing any Restricted Stock Award or any other agreement between a Participant and the Company, each then outstanding Restricted Stock Award shall continue to become free from conditions or restrictions in accordance with the original schedule set forth in such Restricted Stock Award, provided,

however, that each such Restricted Stock Award shall immediately become free from all conditions or restrictions if, on or prior to the first anniversary of the date of the consummation of the Change in Control Event, the Participant's employment with the Company or the acquiring or succeeding corporation is terminated for Good Reason by the Participant or is terminated without Cause by the Company or the acquiring or succeeding corporation.

(iv) Effect on Stock Appreciation Rights and Other Stock Unit Awards

The Board may specify in an Award at the time of the grant the effect of a Reorganization Event and Change in Control Event on any SAR and Other Stock Unit Award. Any substitution of an outstanding SAR or Other Stock Unit Award made pursuant to this Section 9(b)(iv) shall be made in a manner consistent with the requirements of Treasury Regulation § 1.409A-1(b)(5)(v)(D) (or any successor regulation), in the case of a Non-Qualified Stock Option, and Treasury Regulation §1.424-1(a) (or any successor regulations), in the case of an Incentive Stock Option.

10. General Provisions Applicable to Awards

(a) Transferability of Awards. Awards shall not be sold, assigned, transferred, pledged or otherwise encumbered by the person to whom they are granted, either voluntarily or by operation of law, except by will or the laws of descent and distribution or, other than in the case of an Incentive Stock Option, pursuant to a qualified domestic relations order, and, during the life of the Participant, shall be exercisable only by the Participant, except as may be otherwise provided in an Award agreement; provided, however, that the gratuitous transfer of the Award by the Participant to or for the benefit of any immediate family member, domestic partner, family trust or other entity established for the benefit of the Participant and/or an immediate family member thereof if, with respect to such proposed transferee, the Company would be eligible to use a Registration Statement on Form S-8 for the registration of the sale of the Common Stock subject to such Award under the Securities Act ; provided, further, that the Company shall not be required to recognize any such transfer until such time as the Participant and such authorized transferee shall, as a condition to such transfer, deliver to the Company a written instrument in form and substance satisfactory to the Company confirming that such transferee shall be bound by all of the terms and conditions of the Award; and, provided, further, that no option intended to be an incentive stock option shall be transferable unless the Board shall otherwise permit. References to a Participant, to the extent relevant in the context, shall include references to authorized transferees.

(b) Documentation. Each Award shall be evidenced in such form (written, electronic or otherwise) as the Board shall determine. Each Award may contain terms and conditions in addition to those set forth in the Plan.

(c) Board Discretion. Except as otherwise provided by the Plan, each Award may be made alone or in addition or in relation to any other Award. The terms of each Award need not be identical, and the Board need not treat Participants uniformly.

(d) Termination of Status. The Board shall determine the effect on an Award of the disability, death, termination of employment, authorized leave of absence or other change in the employment or other status of a Participant and the extent to which, and the period during which,

the Participant, or the Participant's legal representative, conservator, guardian or Designated Beneficiary, may exercise rights under the Award.

(e) Withholding. The Participant must satisfy all applicable federal, state, and local or other income and employment tax withholding obligations before the Company will deliver stock certificates or otherwise recognize ownership of Common Stock under an Award. The Company may decide to satisfy the withholding obligations through additional withholding on salary or wages. If the Company elects not to or cannot withhold from other compensation, the Participant must pay the Company the full amount, if any, required for withholding or have a broker tender to the Company cash equal to the withholding obligations. Payment of withholding obligations is due before the Company will issue any shares on exercise or release from forfeiture of an Award or, if the Company so requires, at the same time as is payment of the exercise price unless the Company determines otherwise. If provided for in an Award or approved by the Board in its sole discretion, a Participant may satisfy such tax obligations in whole or in part by delivery of shares of Common Stock, including shares retained from the Award creating the tax obligation, valued at their Fair Market Value; provided, however, except as otherwise provided by the Board, that the total tax withholding where stock is being used to satisfy such tax obligations cannot exceed the Company's minimum statutory withholding obligations (based on minimum statutory withholding rates for federal and state tax purposes, including payroll taxes, that are applicable to such supplemental taxable income), except that, to the extent that the Company is able to retain shares of Common Stock having a Fair Market Value that exceeds the statutory minimum applicable withholding tax without financial accounting implications or the Company is withholding in a jurisdiction that does not have a statutory minimum withholding tax, the Company may retain such number of shares of Common Stock (up to the number of shares having a fair market value equal to the maximum individual statutory rate of tax (determined by (or in a manner approved by) the Company)) as the Company shall determine in its sole discretion to satisfy the tax liability associated with any Award. Shares surrendered to satisfy tax withholding requirements cannot be subject to any repurchase, forfeiture, unfulfilled vesting or other similar requirements.

(f) Amendment of Award. Except as otherwise provided in Sections 5(g) and 6(e) with respect to repricings or Section 11(d) with respect to actions requiring stockholder approval, the Board may amend, modify or terminate any outstanding Award, including but not limited to, substituting therefor another Award of the same or a different type, changing the date of exercise or realization, and converting an Incentive Stock Option to a Nonstatutory Stock Option, provided either (i) that the Participant's consent to such action shall be required unless the Board determines that the action, taking into account any related action, would not materially and adversely affect the Participant or (ii) that the change is permitted under Section 9 hereof; provided further, notwithstanding anything to the contrary herein, the Board shall have no authority to amend, modify or terminate any outstanding Award that has the same effect of actions expressly prohibited by Section 5(g) and requires approval by the Company's stockholders.

(g) Conditions on Delivery of Stock. The Company will not be obligated to deliver any shares of Common Stock pursuant to the Plan or to remove restrictions from shares previously delivered under the Plan until (i) all conditions of the Award have been met or removed to the satisfaction of the Company, (ii) in the opinion of the Company's counsel, all other legal matters in connection with the issuance and delivery of such shares have been satisfied, including any applicable securities laws and any applicable stock exchange or stock market rules and regulations,

and (iii) the Participant has executed and delivered to the Company such representations or agreements as the Company may consider appropriate to satisfy the requirements of any applicable laws, rules or regulations.

(h) Acceleration. Except as otherwise provided in Sections 5(d), 6(d), 7(b), 8 and 10(i) with respect to minimum vesting of Awards, the Board may at any time provide that any Award shall become immediately exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be. Additionally, notwithstanding the minimum vesting requirements provided in Sections 5(d), 6(d), 7(b), 8 and 10(i), and to the extent permitted by or consistent with Section 409A of the Code, upon the Participant's termination due to the Participant's death or disability, the Board may, at the time of grant or at any other time, provide that such Participant's award shall immediately become vested and/or exercisable in full or in part, free of some or all restrictions or conditions, or otherwise realizable in full or in part, as the case may be, regardless of whether the first anniversary of the date of grant has occurred (or, in the case of Awards to non-employee directors, regardless of whether the earlier of the first anniversary of the date of grant or the date of the first annual meeting held after the date of grant has occurred).

(i) Performance Awards

(i) Grants. Restricted Stock Awards and Other Stock Unit Awards under the Plan may be made subject to the achievement of performance goals pursuant to this Section 10(i) ("Performance Awards"), subject to the limit in Section 4(c) on shares covered by such grants. Performance Awards can also provide for cash payments of up to $2,000,000 per calendar year per individual. Subject to Section 10(h), Performance Awards shall not vest prior to the first anniversary of the date of grant. If Dividends or Dividend Equivalents are granted in connection with a Performance Award, such Dividend or Dividend Equivalent shall be paid only if the performance goal or goals associated with such Performance Award are satisfied. The Committee shall have the power to impose such other restrictions on Performance Awards as it may deem necessary or appropriate.

11. Miscellaneous

(a) No Right To Employment or Other Status. No person shall have any claim or right to be granted an Award, and the grant of an Award shall not be construed as giving a Participant the right to continued employment or any other relationship with the Company. The Company expressly reserves the right at any time to dismiss or otherwise terminate its relationship with a Participant free from any liability or claim under the Plan, except as expressly provided in the applicable Award.

(b) No Rights As Stockholder. Subject to the provisions of the applicable Award, no Participant or Designated Beneficiary shall have any rights as a stockholder with respect to any shares of Common Stock to be distributed with respect to an Award until becoming the record holder of such shares.

(c) Effective Date and Term of Plan. The Plan shall become effective immediately prior to the closing of the Company's initial public offering. No Awards shall be granted prior to

(i) the date on which the Plan was adopted by the Board or (ii) the date the Plan was approved by the Company's stockholders. The Plan shall expire on May 23, 2028.

(d) Amendment of Plan. The Board may amend, suspend or terminate the Plan or any portion thereof at any time; provided, however, that, to the extent determined by the Board, no amendment requiring stockholder approval under any applicable legal, regulatory or listing requirement shall become effective until such stockholder approval is obtained; provided further, that stockholder approval shall be required for any amendment to the Plan that (i) materially increases the number of shares of Common Stock available for issuance under the Plan (other than an increase to reflect an adjustment described in Section 9) or (ii) materially expands the class of service providers eligible to participate in the Plan.

(e) Authorization of Sub-Plans. The Board may from time to time establish one or more sub-plans under the Plan for purposes of satisfying applicable blue sky, securities or tax laws of various jurisdictions. The Board shall establish such sub-plans by adopting supplements to this Plan containing (i) such limitations on the Board's discretion under the Plan as the Board deems necessary or desirable or (ii) such additional terms and conditions not otherwise inconsistent with the Plan as the Board shall deem necessary or desirable. All supplements adopted by the Board shall be deemed to be part of the Plan, but each supplement shall apply only to Participants within the affected jurisdiction and the Company shall not be required to provide copies of any supplement to Participants in any jurisdiction which is not the subject of such supplement.

(f) Provisions for Foreign Participants. The Board may modify Awards or Options granted to Participants who are foreign nationals or employed outside the United States or establish subplans or procedures under the Plan to recognize differences in laws, rules, regulations or customs of such foreign jurisdictions with respect to tax, securities, currency, employee benefit or other matters.

(g) Compliance with Code Section 409A. It is intended that the provisions of the Plan and any Award granted thereunder comply with or be exempt from Section 409A of the Code and the Treasury regulations thereunder (together, "Section 409A"), and all provisions of the Plan and any Award shall be construed and interpreted in a manner consistent with the requirements for avoiding taxes or penalties under Section 409A. If an Award that is subject to Section 409A is payable upon a Change in Control Event which is not a permissible payment event or time (as described in Treasury Regulation § 1.409A-3) then, for purposes of payment of such Award, no Change in Control Event shall be deemed to have occurred with respect to that Award unless and until there occurs a change in the ownership or effective control of the Company, or in the ownership of a substantial portion of the assets of the Company (within the meaning in accordance with Treasury Regulation § 1.409A-3(i)(5)). To the extent required or advisable to avoid a violation of Section 409A, no discretion to require payment of an Award that is subject to Section 409A upon a Change in Control Event shall be exercised if not set forth in writing by the time required under Section 409A. If an Award is subject to Section 409A and payment is due upon a termination of employment or service, payment shall only be made if such termination constitutes a "separation from service" within the meaning of Section 409A. If an Award is subject to Section 409A and payment is due upon a Grantee's disability, payment shall be made upon a determination by the Administrator that the Grantee is disabled within the meaning of Treasury Regulation § 1.409A-3(i)(4). If an Award is subject to Section 409A, any payment made to a Grantee who is

a "specified employee" (within the meaning of Section 409A) of the Company or any Subsidiary shall not be made before the date that is six months after the Grantee's "separation from service" (within the meaning of Section 409A) to the extent required to avoid the adverse consequences of Section 409A. Nothing in this Plan or in an Award agreement shall be interpreted or construed to transfer any liability for any tax (including a tax or penalty due as a result of a failure to comply with Section 409A) to the Company or to any other individual or entity, and the Company shall have no liability to a Grantee, or any other party, if an Award that is intended to be exempt from, or compliant with, Section 409A is not so exempt or compliant.

(h) Governing Law. The provisions of the Plan and all Awards made hereunder shall be governed by and interpreted in accordance with the laws of the State of Delaware, excluding choice-of-law principles of the law of such state that would require the application of the laws of a jurisdiction other than such state.

Approved by the Compensation Committee of the Board of Directors of Emergent BioSolutions Inc. on January 4, 2023.

EXECUTION VERSION

CERTAIN CONFIDENTIAL INFORMATION CONTAINED IN THIS DOCUMENT, MARKED BY [***], HAS BEEN OMITTED BECAUSE IT IS BOTH (I) NOT MATERIAL AND (II) IS THE TYPE THAT THE REGISTRANT TREATS AS PRIVATE OR CONFIDENTIAL.

PURCHASE AND SALE AGREEMENT

by and among

BAVARIAN NORDIC A/S,

EMERGENT INTERNATIONAL INC.

and

EMERGENT TRAVEL HEALTH INC.

Dated as of February 15, 2023

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PURCHASE AND SALE AGREEMENT

THIS PURCHASE AND SALE AGREEMENT, dated as of February 15, 2023 (this "**Agreement**"), is entered into by and among BAVARIAN NORDIC A/S, a private limited liability company organized under the laws of Denmark ("**Buyer**"), EMERGENT INTERNATIONAL INC., a Delaware corporation ("**EII**"), and EMERGENT TRAVEL HEALTH INC., a Delaware corporation ("**ETHI,**" and together with EII, the "**Sellers**," and each individually, a "**Seller**"). Each of Buyer and Sellers are sometimes referred to individually herein as a "**Party**" and collectively as the "**Parties.**" Each capitalized term used in this Agreement and not otherwise defined herein has the meaning specified in Section 8.1 below.

Background Statement

A. EII owns all of the issued and outstanding Equity Interests (the "**Shares**") of EMERGENT BIOSOLUTIONS BERNA GMBH (CHE-334.354.325), a Swiss limited liability company with its seat in Koniz, Switzerland ("**Berna**," and collectively with all of its Subsidiaries, the "**Acquired Companies**").

B. Prior to Closing and to facilitate the consummation transactions contemplated by this Agreement, Sellers will, and will cause their respective Affiliates, to effect those reorganization steps generally described on Exhibit A attached hereto (the "**Reorganization**") and pursuant to Section 4.9.

C. ETHI and the Acquired Companies are engaged in the business of (i) manufacturing, marketing and selling oral travel vaccines, including Vivotif and Vaxchora for typhoid and cholera, respectively, and (ii) researching and developing the Product Candidates (the "**Business**").

D. Upon the terms conditions of this Agreement, (i) Buyer desires to purchase from EII and EII desire to sell to Buyer the Shares, and (ii) Buyer desires to purchase from ETHI and ETHI desires to sell to Buyer substantially all ETHI's rights, interests and assets used in its operation of the Business.

E. In connection with the transactions contemplated hereby, Buyer has entered into a certain debt commitment letter with Nordea Danmark, Filial af Nordea Bank Abp, Finland and Danske Bank A/S (together, the "**Debt Provider**") to obtain a DKK 1,500,000,000 bridge facility in favor of Buyer (the "**Debt Commitment Letter**"), attached hereto as Exhibit B.

F. Concurrently with the execution of this Agreement, and as a condition and inducement to the willingness of Sellers to enter into this Agreement Buyer has delivered to Sellers and the Acquired Companies a true, complete and correct copy of the R&W Insurance Binder.

NOW, THEREFORE, in consideration of the foregoing, and the respective representations, warranties, covenants and agreements set forth in this Agreement, the Parties, intending to be legally bound, hereby agree as follows:

ARTICLE 1
PRINCIPAL TRANSACTION

Section 1.1 Purchase and Sale.

(a) **Purchase and Sale of Shares**. On the terms and subject to the conditions of this Agreement, at Closing, EII shall sell and transfer to Buyer, and

Buyer shall purchase from EII all of the Shares, free and clear of all Encumbrances, other than Encumbrances and restrictions imposed by applicable securities Laws.

(b) **Purchase and Sale of Purchased Assets**. On the terms and subject to the conditions of this Agreement, at Closing, ETHI shall (and shall cause certain of its applicable Affiliates to) sell, transfer and convey to Buyer, and Buyer shall purchase from ETHI (and/or certain of its Affiliates), free and clear of all Encumbrances other than Permitted Encumbrances, all of ETHI's (and/or its Affiliates') right, title and interest in, to and under the following assets, properties and rights to the extent existing at the Closing Date (collectively, the "**Purchased Assets**") together with all rights and obligations of any nature which are now or which may at any time prior to the Closing become attached to the Purchased Assets or accrue in respect of them:

(i) all accounts or notes receivable of ETHI exclusively related to or arising out of the operation of the Business;

(ii) all inventory, finished goods, raw materials, work in progress, packaging, supplies, parts and other inventories related to or arising out of (a) the operation of the Business, or (b) the Transferring Products ("**Inventory**");

(iii) all Contracts set forth on Section 1.1(b)(iii) of the Disclosure Schedule, including the Intellectual Property Agreements (collectively, the "**Assigned Contracts**");

(iv) the Product Registrations, which shall transfer as further set out in the Transition Services Agreement, and Regulatory Documents;

(v) all Intellectual Property Rights that are owned by ETHI or its Affiliates and used in connection with the Business with the exception of (A) any and all (1) trademarks, (2) trade dress, (3) service marks, (4) trade names, (5) business names, (6) designs logos, slogans, internet domain names, and (7) other indicia of source or origin in each case ((1) to (7)) that are not used primarily in the conduct of the Business, together with all translations, adaptations, derivations, and combinations thereof, all applications, registrations, and renewals in connection therewith and the rights related thereto, and (B) any and all Intellectual Property Rights that are used by Sellers in the provision of general administrative and corporate services (including legal and human resources), financial and accounting services, and information technology and other support services and functions to the Business, including IT systems and infrastructure (the "**Intellectual Property Assets**"), *provided* that notwithstanding anything to the contrary herein the Intellectual Property Assets include the Business Registered IP set out on Section 2.12(a) of the Disclosure Schedule;

(vi) all furniture, fixtures, equipment, supplies and other tangible personal property of the Business listed on Section 1.1(b)(vi) of the Disclosure Schedule;

(vii) the Leased Real Property;

(viii) all Governmental Authorizations held by ETHI or its Affiliate(s) for use in connection with the Business, including the Governmental Authorizations listed on Section 1.1(b)(viii) of the Disclosure Schedule;

(ix) all prepaid expenses, credits, advance payments, security, deposits, charges, sums and fees held by ETHI exclusively for use in connection with the Business;

(x) all of ETHI's and its Affiliate(s)' rights under warranties, indemnities and all similar rights against third parties to the extent related to any Purchased Assets;

(xi) originals, or where not available, copies, of all books and records, including books of account, ledgers and general, financial and accounting records, machinery and equipment maintenance files, customer lists, customer purchasing histories, price lists, distribution lists, supplier lists, production data, quality control records and procedures, customer complaints and inquiry files, research and development files, records and data (including all correspondence with any Governmental Body), sales material and records, strategic plans, internal financial statements and marketing and promotional surveys, material and research, that primarily relate to the Business or the Purchased Assets, other than books and records described in Section 1.1(c) below;

(xii) all goodwill associated with any of the assets described in the foregoing clauses; and

(xiii) all other rights, property and assets (other than the Excluded Assets) used to conduct the Business as conducted by Sellers and their Affiliates in the Ordinary Course of Business.

(c) **Excluded Assets**. Other than the Shares and the Purchased Assets, Buyer expressly understands and agrees that it is not purchasing or acquiring, and Sellers are not selling or assigning, any other assets or properties of either Seller, and all such other assets and properties shall be excluded from the Purchased Assets (the "**Excluded Assets**"). Without limiting the generality of the foregoing, Excluded Assets include the following assets and properties of Sellers:

(i) all cash and cash equivalents, bank accounts, and securities of Sellers;

(ii) all Contracts that are not Assigned Contracts;

(iii) all Intellectual Property Rights other than (A) the Intellectual Property Assets, and (B) any Intellectual Property Rights which are the subject of the Intellectual Property Agreements or licences granted under any of the other Assigned Contracts;

(iv) the corporate seals, organizational documents, minute books, stock books, Tax Returns, books of account or other records having to do with the corporate organization of either Seller, all employee-related or employee benefit-related files or records, other than personnel files of Transferred Employees, and any other books and records which either Seller is prohibited from disclosing or transferring to Buyer under applicable Law and is required by applicable Law to retain;

(v) all insurance policies of Sellers and all rights to applicable claims and proceeds thereunder;

(vi) all Benefit Plans (other than the Benefit Plans of an Acquired Company, including related files and records) and trusts or other assets attributable thereto;

(vii) all Tax assets (including duty and Tax refunds and prepayments) of Sellers;

(viii) all assets (including real, tangible and intangible), wherever located, that are used by Sellers in the provision of general administrative and corporate services (including legal and human resources), financial and accounting services, and information technology and other support services and functions to the Business, including IT systems and infrastructure;

(ix) all rights to any action, suit or claim of any nature available to or being pursued by a Seller, whether arising by way of counterclaim or otherwise and in each case except to the extent in relation to the Intellectual Property Assets, Licensed Business Intellectual Property, or Owned Business Intellectual Property;

(x) the assets, properties and rights specifically set forth on Section 1.1(c)(x) of the Disclosure Schedule; and

(xi) the rights which accrue or will accrue to either Seller under the Transaction Documents.

(d) **Assumption of Liabilities**. Subject to the terms and conditions set forth herein, Buyer shall assume and agree to pay, perform and discharge when due any and all liabilities and obligations of either Seller arising out of or relating to the Business or the Purchased Assets prior to, on or after the Closing, other than the Excluded Liabilities (collectively, the "**Assumed Liabilities**"), including, without limitation, the following:

(i) all trade accounts payable of ETHI to third parties in connection with the Business that remain unpaid as of the Closing Date;

(ii) all liabilities and obligations arising under or relating to the Assigned Contracts;

(iii) as specifically provided in Section 4.5, all liabilities and obligations of Buyer or its Affiliates relating to employee benefits, compensation or other arrangements with respect to any Transferred Employee arising, on or after the Closing; and

(iv) all other liabilities and obligations exclusively arising out of or relating to the ownership or operation of the Business and the Purchased Assets.

(e) **Excluded Liabilities**. Other than the Assumed Liabilities, Buyer shall not assume and shall not be responsible to pay, perform or discharge any other Liabilities of Sellers (collectively, the "**Excluded Liabilities**"), including:

(i) any liabilities or obligations relating to or arising out of the Excluded Assets;

(ii) without duplication of any obligation of Sellers hereunder with respect to Taxes, any liabilities for Taxes for any Pre-Closing Tax Period, any of Sellers' liabilities for Transfer Taxes as allocated to Sellers pursuant to

Section 4.6(d) below, or any liabilities of Seller for Taxes (including the Taxes of any Person under Treasury Regulation §1.1502-6 or any similar provision of state, local, or non-U.S. law, as a transferee or successor, by contract, or otherwise); *excluding*, *however*, any liability for Taxes resulting from the revocation (in whole or in part) of the Tax holiday granted under the Tax Holiday Decree arising out of or related to Buyer's or Berna's actions or inactions following the Closing in violation of the terms and conditions of Sections 4 or 5 of the Tax Holiday Decree;

(iii) except as specifically provided in Section 4.5, all liabilities and obligations of Seller relating to employee benefits, compensation or other arrangements with respect to any Transferred Employee arising prior to Closing; and

(iv) any liabilities or obligations of either Seller arising or incurred in connection with the negotiation, preparation, investigation and performance of this Agreement, the other Transaction Documents and the transactions. contemplated hereby and thereby, including, without limitation, fees and expenses of counsel, accountants, consultants, advisers and others.

Section 1.2 Purchase Price. Subject to adjustment pursuant to Section 1.7 below, and in addition to the assumption of the Assumed Liabilities, the payment of the Milestone Payments pursuant to Section 1.3(a) below, and the payment of the Earnout Payment pursuant to Section 1.3(b) below, the aggregate consideration to be paid by Buyer to Sellers in exchange for the sale and transfer of the Shares and the Purchased Assets (the "**Purchase Price**") consists of:

(a) $270,000,000 ("**Base Cash Amount**");

(b) *plus* the amount, if any, by which the Closing Net Working Capital exceeds the Target Amount;

(c) *minus* the amount, if any, by which the Target Amount exceeds the Closing Net Working Capital;

(d) *plus* the Closing Cash;

(e) *minus* the Closing Debt;

(f) minus the Closing Transaction Expenses; and

(g) *minus* the Closing Tax Liability Amount (the aggregate net amount of clauses (a) – (g) above, the "**Closing Cash Payment**").

Section 1.3 Additional Consideration.

(a) *Milestone Payments*. As further consideration for the sale and transfer of the Shares and the Purchased Assets, Buyer shall pay to Sellers the following milestone payments (each a "**Milestone Payment**," and collectively the "**Milestone Payments**") upon the achievement of each of the following events (each a "**Milestone Event**," and collectively the "**Milestone Events**"):

Milestone Event	Milestone Payment
[***]	$[***]
[***]	$[***]

[***]	$[***]
[***]	$[***]
Total	$80,000,000

Buyer shall notify Sellers promptly, and in any event within [***] after each Milestone Event has been achieved. Following receipt of such notification, Sellers shall issue an invoice to Buyer for the relevant Milestone Payment, and such invoice shall be payable within [***] of Buyer's receipt of such invoice in cash by wire transfer of immediately available funds to the bank account(s) designated by Sellers. For the avoidance of doubt each Milestone Event shall be payable no more than once.

(b) *Earnout Payment*.

(i) As further consideration for the sale and transfer of the Shares and the Purchased Assets, Buyer shall pay to Sellers, an amount (such amount, the "**Earnout Payment**") calculated as follows:

(A) [***];

(B) if the 2026 Aggregate Net Revenues are equal to or more than $[***], then the Earnout Payment shall be $30,000,000; or

(C) [***].

(ii) For purposes of this Agreement, "**2026 Aggregate Net Revenues**" means, for the fiscal year ending December 31, 2026, the aggregate gross amount invoiced to customers by Buyer and all of its Affiliates (including the Acquired Companies) in respect of sales of the Products, *less* the following actual amounts incurred or accrued in relation to the Products (without double counting):

(A) [***]

(B) [***]

(C) [***]

(D) [***]

(E) [***]

(F) [***]

For purposes of determining 2026 Aggregate Net Revenues, a Product shall be deemed to be sold when invoiced and a "sale" shall not include transfers or dispositions of such Product for charitable, promotional, pre-clinical or clinical purposes, or regulatory or governmental purposes, in each case, without charge. 2026 Aggregate Net Revenues shall only include the value charged or invoiced on the first sale to a third party, and sales between or among Buyer, the Acquired Companies, or their respective Affiliates (as applicable), so long as such Product is resold to a third party, shall be disregarded for purposes of calculating 2026 Aggregate Net Revenues.

(iii) On or before [***], Buyer shall prepare and deliver to Sellers a statement (the "**Earnout Statement**") setting forth its good faith calculation of the Earnout Payment (the "**Earnout Calculation**"), which Earnout Statement shall include all reasonable supporting documentation and information in respect of such Earnout Calculation. Sellers shall have [***] after receipt of the Earnout Statement (the "**Earnout Review Period**") to review the Earnout Statement and the Earnout Calculation set forth therein. The Earnout Statement shall become final upon the earlier of (A) written acceptance thereof by Sellers or (B) at the end of the last day of the Earnout Review Period if Buyer does not receive a written notice of Sellers' objection to the Earnout Statement (the "**Earnout Objection Notice**"). If Sellers timely deliver an Earnout Objection Notice, then Buyer and Sellers shall negotiate in good faith in an effort to resolve in writing any differences they have with respect to the matters specified in the Earnout Statement. If Buyer and Sellers are unable to resolve all of the disputed items set forth in the Earnout Objection Notice on or prior to thirty (30) days following the delivery of such Earnout Objection Notice (or such longer period of time as the parties may mutually agree in writing), Buyer and Sellers shall engage the Accounting Firm (as defined below) to make a final determination of the Earnout Calculation. The Accounting Firm shall act as a neutral arbitrator and shall resolve only the disputed items that have been referred to it pursuant to this Section 1.3(b) and solely in accordance with the procedures (including any relevant defined terms) set forth in this Agreement. The determination by the Accounting Firm will be final, conclusive and binding upon the parties with respect to the items in the Earnout Objection Notice submitted to the Accounting Firm for resolution, absent bad faith or manifest error. Each of Buyer and Sellers shall pay its own costs and expenses in connection with any disagreement as to the items in the Earnout Objection Notice submitted to the Accounting Firm for resolution. The Accounting Firm's fees and expenses in connection with resolving the disputes set forth in the Earnout Objection Notice shall be [***]. Judgment may be entered upon the determination of the Accounting Firm in any court having jurisdiction over the party against which such determination is to be enforced. Sellers and Buyer shall make available to the Accounting Firm all relevant books and records relating to the calculations submitted and all other information reasonably requested by the Accounting Firm.

(iv) Buyer shall pay the applicable Earnout Payment (if any) no later than [***] following the date upon which the determination of the Earnout Payment becomes final and binding upon the Parties as provided in Section 1.3(b) (including any final resolution of any dispute raised by Sellers

in an Earnout Objection Notice). Buyer shall pay to Seller the applicable Earnout Payment in cash by wire transfer of immediately available funds to the bank account(s) designated by Sellers.

(c) Buyer's obligation to pay each of the Milestone Payments for any Milestone Event that it achieves and the Earnout Payment to Sellers in accordance with and subject to the conditions and limitations set forth in this Section 1.3 is an independent obligation of Buyer and is not otherwise conditioned or contingent upon the satisfaction of any conditions precedent to any preceding or subsequent Milestone Payment or Earnout Payment.

(d) Neither Buyer nor any of its Affiliates (i) shall be under any obligation or have any duty to act in such a manner that any of the Milestone Payments are paid, or if payable, are maximized, (ii) will owe any holder of Equity Interests of Sellers any fiduciary or other similar duty in respect of this Section 1.3, or (iii) will have any obligation, or shall be bound by an agreement or covenant of any kind, in respect of this Section 1.3 other than an obligation to comply with the covenants and agreements expressly set forth in this Section 1.3. Notwithstanding the foregoing:

(i) Buyer shall not, and shall cause its Affiliates not to, take action, directly or indirectly, with the primary intention of (A) preventing, or avoiding the making any Milestone Payment or the Earnout Payment, or (B) reducing the amount of the Milestone Payments or the Earnout Payment;

(ii) Buyer shall use Commercially Reasonable Efforts to develop CHIK VLP;

(iii) prior to the first to occur of either (1) the achievement of the Milestone Events, or (2) Buyer's termination of the CHIK VLP development program and its final abandonment of the development of CHIK VLP, Buyer shall deliver to Sellers a [***] written reports summarizing Buyer's high-level progress on the development of CHIK VLP, including the status of all clinical trials and material filings with applicable Governmental Bodies in the US and European Union;

(iv) during the period from the Closing Date through December 31, 2026 (the "**Earnout Period**") Buyer shall, and shall cause its Affiliates to, (1) use its Commercially Reasonable Efforts to promote the marketing, sale and distribution of the Products, (2) not engage in any practice that could be reasonably considered Channel Stuffing of any Product prior January 1, 2026, and (3) not engage in any practice for the primary purposes of delaying or deferring the sale or distribution of the Products until after January 1, 2027 in order to minimize any Earnout Payment;

(v) commencing January 1, 2025, Buyer shall deliver to Sellers [***] written reports regarding the sale of Products during the immediately preceding [***]; and

(vi) upon Sellers' advance written request (but no more than once per calendar year), Buyer shall provide Sellers and their Representatives access to Buyer's books and records related to the sale and distribution of Products for Sellers' use in confirming the sales of Products as set forth in the Earnout Statement and/or the [***] reports delivered pursuant to Section 1.3(d)(v).

Section 1.4 Estimated Closing Statement and Payment Spreadsheet. At least [***] prior to the Closing Date, Sellers will deliver to Buyer: (a) a statement (the "**Estimated Closing Statement**"), setting forth their good faith estimate of the amount of (i) the Closing Net Working Capital, (ii) the Closing Cash, (iii) the Closing Debt, (iv) the Closing Transaction Expenses, (v) the Closing Tax Liability Amount, and (vi) the resulting calculation of the Closing Cash Payment derived therefrom (the "**Estimated Closing Cash Payment**"); and (b) a spreadsheet (the "**Payment Spreadsheet**"), setting forth the payment amounts and the applicable wire transfer instructions for the payment of the various amounts described in Section 1.6 below.

Section 1.5 Closing. The consummation of the transactions contemplated by this Agreement ("**Closing**"), will take place by conference call and electronic (i.e., email/PDF) or facsimile exchange of signatures, documents and other deliverables required to be executed and/or delivered at Closing, at 10:00 a.m. Eastern Time on: (a) the later of (i) the [***] following the satisfaction or waiver of the conditions set forth in ARTICLE 5 (other than conditions which by their nature are to be satisfied at Closing, which conditions must be satisfied at Closing, unless waived), and (ii) at the election of Sellers, in their sole discretion, such later date that is [***]or (b) at any other time or date (or in any other manner) as may be mutually agreed in writing by Buyer and Sellers. The date on which Closing occurs is referred to as the "**Closing Date.**" For all purposes of this Agreement, Closing will be deemed effective as of the 11:59 pm Eastern Time on the Closing Date (the "**Closing Effective Time**").

Section 1.6 Closing Deliverables.

(a) **Payment of Estimated Closing Cash Payment**. At Closing, Buyer will (or will cause) an aggregate amount equal to the Estimated Closing Cash Payment to be paid to Sellers via wire transfers of immediately available funds to the accounts of the respective Sellers as set forth in the Payment Spreadsheet.

(b) **Payment of Closing Debt and Closing Transaction Expenses**. At Closing:

(i) Buyer shall pay and discharge (or shall cause to be paid and discharged) on behalf of, and for the account of, the Acquired Companies the aggregate amount of the Closing Debt set forth in the Estimated Closing Statement *via* wire transfer of the applicable amounts to the respective payees identified on the Payment Spreadsheet; and

(ii) Buyer shall pay and discharge (or shall cause to be paid and discharged) on behalf of, and for the account of, the Acquired Companies the aggregate amount of the Closing Transaction Expenses (if any) set forth in the Estimated Closing Statement *via* wire transfer of the applicable amounts to the respective payees identified on the Payment Spreadsheet.

(c) **Sellers Closing Deliverables**. At Closing, each of the respective Sellers shall deliver to Buyer the following:

(i) the register of beneficial owners of Berna, together with evidence for the valid (re-)election of the members of the board of managing officers;

(ii) a written assignment agreement in accordance with art. 785 of the Swiss Code of Obligations regarding the assignment and transfer of the Shares, duly executed by EII (the "**Shares Assignment**");

(iii) a resolution of the board of managing officers of Berna, duly signed by all members of the board of managing officers, approving the entry of the Buyer in Berna's quota register as quotaholder of the Shares with full voting rights;

(iv) the quota register of Berna, duly signed by the board of managing officers, in which Buyer is entered into as the quotaholder of the Shares with full voting rights;

(v) an application to the commercial register, duly signed by the board of managing officers, to register Buyer as new quotaholder of the Shares with the competent commercial register;

(vi) a bill of sale duly executed by ETHI, transferring the tangible personal property included in the Purchased Assets to Buyer;

(vii) an assignment and assumption (the "**Assignment and Assumption Agreement**") duly executed by ETHI, effecting the assignment to and assumption by Buyer of the Purchased Assets and the Assumed Liabilities;

(viii) all necessary consents, notices, confirmations, waivers and approvals of parties, in a form reasonably acceptable to Buyer, in each case, to each Assigned Contract set forth on Section 1.6(c)(viii) in the Disclosure Schedule;

(ix) (A) a patent assignment transferring all of the registered patents included among the Purchased Assets, (B) a trademark assignment transferring all of the registered trademarks included among the Purchased Assets, (C) [***] and (D) [***] (collectively, the "**IP Transfer Instruments**"), each duly executed by ETHI;

(x) a transition services agreement in the form attached hereto as Exhibit B (the "**Transition Services Agreement**") duly executed by ETHI;

(xi) an assignment of lease in respect of the Leased Real Property (the "**Lease Assignment**") duly executed by ETHI;

(xii) the Sellers Closing Certificate;

(xiii) the Sellers Secretary's Certificates;

(xiv) an IRS Form W-9, duly executed by such Seller;

(xv) the agreements, instruments or other documents evidencing that the Reorganization has been effectuated in accordance with Exhibit A and Section 4.9;

(xvi) the Swiss Tax Ruling (if obtained);

(xvii) the RoFR Waiver; and

(xviii) such other customary instruments of transfer, assumption, filings or documents, in form and substance reasonably satisfactory to Buyer, as may be required to give effect to this Agreement.

(d) **Buyer Closing Deliverables**. At Closing, Buyer shall deliver to Sellers the following:

(i) the Shares Assignment, duly executed by the Buyer;

(ii) the Assignment and Assumption Agreement duly executed by Buyer, effecting the assignment to and assumption by Buyer of the Purchased Assets and the Assumed Liabilities;

(iii) the IP Transfer Instruments, each duly executed by Buyer;

(iv) Transition Services Agreement duly executed by Buyer;

(v) the Lease Assignment, duly executed by Buyer;

(vi) the Buyer Closing Certificate;

(vii) the Buyer Secretary's Certificates; and

(viii) such other customary instruments of transfer, assumption, filings or documents, in form and substance reasonably satisfactory to Sellers, as may be required to give effect to this Agreement.

Section 1.7 Post-Closing Adjustment.

(a) **Post-Closing Statement; Accounting and Calculation Principles and Methodologies**. As soon as reasonably practicable following the Closing Date, and in any event within [***] thereof, Buyer shall prepare and deliver to Sellers a written statement (the "**Post-Closing Statement**"), setting forth its good faith calculation of Closing Net Working Capital, the Closing Debt, the Closing Cash, the Closing Transaction Expenses and the Closing Tax Liability Amount, in each case, calculated and determined in accordance with the Agreed Calculation Principles and in a manner consistent with the definitions of Closing Net Working Capital, Closing Debt, Closing Cash, Closing Transaction Expenses and Closing Tax Liability Amount (and in each case any definitions of defined terms used therein) (such amounts defined by such definitions, the "**Price Components**"). Nothing contained in this Section 1.7 or elsewhere in this ARTICLE 1 is intended to, nor shall it be used, applied, deemed or construed to, adjust for errors or omissions that may be found with respect to any balance sheet included in Exhibit 8.1(B) (*Illustrative Net Working Capital Calculation*), the Recent Balance Sheet, any other balance sheet referenced in Section 2.7 (*Financial Statements*) or any inconsistencies between the Recent Balance Sheet, any other balance sheet referenced in Section 2.7 (*Financial Statements*) and GAAP. The Parties agree that the purpose of preparing the Post-Closing Statement and determining the Price Components and the related adjustment to the Estimated Closing Cash Payment contemplated by this Section 1.7 is not intended to permit the introduction of accounting methods, policies, practices, procedures, classifications, judgments, assumptions or estimation methodologies in preparing the Post-Closing Statement or determining the Price Components that are inconsistent with or different from those included among the Agreed Calculation Principles. Additionally, the Parties further acknowledge understand and agree that any and all Transaction Tax Deductions shall be treated as having occurred and been paid prior to the Closing (and allocated to a Pre-Closing Tax Period) for any and all Tax and other purposes under this Agreement to the extent such deductions satisfy a "more likely than not" standard (or higher level of confidence) (including for purposes of calculating and determining the amount of the liabilities for (i) Pre-Closing Taxes included or taken into account in the calculation or determination of the Closing Tax Liability Amount and (ii) any other Taxes included or taken into account in the calculation or determination of Closing Net Working Capital or any other Price Component (or component thereof)),

in each case, regardless of when any fee, cost, expense or other amount giving rise to such Transaction Tax Deduction is actually incurred, paid or satisfied prior to, on or after the Closing Date.

(b) **Review of Post-Closing Statement**. Sellers will have the opportunity to review the Post-Closing Statement for [***] following receipt of the Post-Closing Statement (the "**Review Period**"). During the Review Period, at the request of a Seller, Sellers or their Representatives will, during normal business hours, be provided with access to the books and records of the Acquired Companies, the books and records included among the Purchased Assets, and other information (including financial statements and work papers (including those prepared by independent third Persons)) of the Acquired Companies and Buyer, in the possession or control of the Acquired Companies, Buyer or their respective Affiliates or Representatives that relate to, as well as access to personnel of Buyer, its Affiliates (including the Acquired Companies) and their respective Representatives that were involved in, the calculation or determination of the items included in the Post-Closing Statement (including making available their chief financial officer(s) and accountants to respond to reasonable written or oral inquiries of Sellers or their Representatives), in each case, as is reasonably necessary in order for Sellers to respond to or evaluate the calculations contained in the Post-Closing Statement. Buyer's calculation of Closing Net Working Capital, Closing Cash, Closing Debt, Closing Transaction Expenses, the Closing Tax Liability Amount and the Final Closing Cash Payment derived therefrom will, absent fraud or manifest error, become final, conclusive and binding on the Parties unless, prior to the end of the Review Period, a Seller notifies Buyer in writing of Sellers' objections to such calculation (an "**Objection Notice**"), identifying in reasonable detail the disputed items, the estimated amounts of the disputed items if then reasonably determinable and the basic facts underlying Sellers' objections. If a Seller delivers an Objection Notice to Buyer prior to the end of the Review Period, Buyer and Sellers will negotiate in good faith to resolve the objections set forth in the Objection Notice within 15 days following delivery of the Objection Notice. If Buyer and Sellers resolve some or all of such objections within that time period, they will document their resolution in a writing signed by each of them, and such resolution will, absent fraud or manifest error, be final, conclusive and binding on the Parties. If Buyer and Sellers are unable to resolve all of the objections of Sellers within the 15-day time period following the delivery of the Objection Notice, the Parties will promptly refer any matters still in dispute for resolution as provided in Section 1.7(c) below.

(c) **Dispute Resolution**. Any unresolved dispute concerning the Post-Closing Statement under Section 1.7(b) above will be referred for resolution to a nationally recognized independent accounting firm mutually agreed to by the Parties and with whom no Party has any current professional relationship (the "**Accounting Firm**"). The Accounting Firm will determine the allocation of its fees and expenses to the respective Parties based on the inverse of the percentage that the Accounting Firm's resolution of the disputed items (before such allocation) bears to the total amount of the disputed items as originally submitted to the Accounting Firm. (For example, if the total amount of the disputed items as originally submitted to the Accounting Firm equal $1,000 and the Accounting Firm awards $600 in favor of Sellers' position, 60% of the fees and expenses of the Accounting Firm would be borne by Buyer and 40% of the fees and expenses of the Accounting Firm would be

borne by Sellers). The Accounting Firm will act as a neutral arbitrator and will resolve only the disputed items that have been referred to it pursuant to this Section 1.7(c) and solely in accordance with the procedures (including any relevant defined terms) set forth in this Agreement. Any resolution of a disputed item by the Accounting Firm must be within the range of the differences between Buyer's and Sellers' positions with respect to such disputed item. The Parties will provide the Accounting Firm with all books and records in their possession reasonably relevant to the determinations to be made by it as may be requested by the Accounting Firm. No Party or any Affiliate or Representative of a Party will meet or discuss any substantive matters with the Accounting Firm without Buyer and Sellers and their respective Representatives present or having the opportunity following at least three Business Days' written notice to be present, either in person or by telephone. The Accounting Firm will have the power to require a Party to provide to it such books and records and other information, and to require a Party to answer questions, that that the Accounting Firm deems reasonably relevant to the resolution of the dispute. All books and records and other information (including answers to questions from the Accounting Firm) submitted to the Accounting Firm must be concurrently delivered to each Other Party. All disputes with respect to the application of accounting principles or to the mathematical calculation of any disputed components of the Post-Closing Statement that have been referred to the Accounting Firm pursuant to this Section 1.7(c) will be resolved exclusively by the Accounting Firm. The determination of the Accounting Firm with respect to disputes to be resolved by it hereunder will be final, conclusive and binding upon the Parties. Closing Net Working Capital, Closing Cash, Closing Debt, Closing Transaction Expenses, the Closing Tax Liability Amount, and the resulting Final Closing Cash Payment derived therefrom, in each case as finally determined in accordance with this Section 1.7 (whether as a result of a failure to timely deliver an Objection Notice, mutual resolution of the Parties pursuant to Section 1.7(b) above, determination by the Accounting Firm in accordance with this Section 1.7(c), or any combination thereof), will be used for purposes of any adjustments to the Estimated Closing Cash Payment pursuant to Section 1.7(d) below. As used herein, the "**Final Determination Date**" shall mean and refer to the date on which all of the Price Components have been finally determined pursuant to this Section 1.7. The process set forth in this Section 1.7 shall be the exclusive remedy of the Parties for any disputes related to the Price Components or any items required to be reflected on the Post-Closing Statement or included in the calculation of any Price Component; provided, however, in no event shall Buyer be entitled to any duplicative recovery as a result of the rights and remedies afforded herein.

(d) **Post-Closing Adjustment to Closing Cash Payment**. Following Closing:

(i) if the Final Closing Cash Payment is more than the Estimated Closing Cash Payment, then within [***] following the Final Determination Date, Buyer shall pay the amount of such excess to Sellers by wire transfer of immediately available funds to the accounts set forth in the Payment Spreadsheet and allocated between Sellers as directed by Sellers; or

(ii) if the Estimated Closing Cash Payment is more than the Final Closing Cash Payment then within [***] following the Final Determination

Date, Sellers shall pay the amount of such excess to Buyer by wire transfer of immediately available funds to an account designated in writing by Buyer;

provided that, for the avoidance of doubt, if the Estimated Closing Cash Payment is equal to the Final Closing Cash Payment, then no adjustment will be made to the Estimated Closing Cash Payment and no payment by Buyer or Sellers shall be required in connection therewith. All payments required to be made under this Section 1.7(d) shall be made without interest.

Section 1.8 Allocation of Purchase Price. The Purchase Price, including any Assumed Liabilities treated as consideration for the Purchased Assets for Tax purposes, will be allocated between Sellers, between the Purchased Assets and the Shares based on relative fair market values as required by applicable Tax laws, and the portion of the Purchase Price allocated to the Purchased Assets shall be further allocated among the Purchased Assets in accordance with Section 1060 of the Code and in a manner consistent with the methodology set forth on Exhibit 1.8 attached hereto. Within [***] following the Closing, Sellers shall prepare and deliver to Buyer for its approval a proposed allocation of the Purchase Price, including any Assumed Liabilities treated as consideration for the Purchased Assets for Tax purposes, and including any adjustments under Section 1.7 above, in a manner consistent with the immediately preceding sentence, such approval not to be unreasonably withheld, delayed or conditioned (as approved, the "**Allocation**"). After Closing, the Parties shall make consistent use of the Allocation for all Tax purposes and in all filings, declarations and reports with the IRS and any other applicable Governmental Body in respect thereof. Each of the applicable Parties shall file an IRS Form 8594 "Asset Acquisition Statement Under Section 1060" at the time and in the manner as required by Treasury Regulation 1.1060-1 consistent with the Allocation, and the Parties agree not to take any position inconsistent therewith for any Tax purpose unless otherwise required under applicable Tax laws or a determination within the meaning of Section 1313 of the Code (or any comparable provision of foreign, state or local Tax law).

Section 1.9 Required Consents & Non-Assignable Assets.

(a) As soon as reasonably practicable following the execution of this Agreement, Sellers shall use commercially reasonable efforts, and Buyer shall cooperate with Seller, to obtain, in a form reasonably acceptable to Buyer, any required consent, authorization, approval or waiver, or any release, substitution or amendment required to transfer, assign, or novate all Assigned Contracts, including the Assumed Liabilities; *provided, however*, that neither Sellers nor Buyer shall be required to pay any consideration therefor.

(b) If Buyer, in its sole discretion, elects to waive the condition in Section 5.2(e)(i) with respect to one or more of the Assigned Contracts set forth on Section 1.6(c)(viii) in the Disclosure Schedule, then:

(i) this Agreement shall not constitute a sale, assignment, transfer, conveyance or delivery, or an attempted sale, assignment, transfer, conveyance or delivery of such Assigned Contract;

(ii) from Closing, all the Purchased Assets shall, pending receipt of any necessary consent, authorization, approval, waiver, release, substitution or amendment, be held by the Sellers and their relevant Affiliates on trust for the Buyer. Once such consent, authorization, approval, waiver, release, substitution or amendment is obtained, Sellers shall sell, assign, transfer,

convey and deliver to Buyer the relevant Purchased Asset to which such consent, authorization, approval, waiver, release, substitution or amendment relates for no additional consideration. Applicable sales, transfer and other similar Taxes in connection with such sale, assignment, transfer, conveyance or license shall be paid by Buyer in accordance with Section 4.6(d); and

(iii) to the extent that any Purchased Asset and/or Assumed Liability cannot be transferred to Buyer following the Closing pursuant to this Section 1.9, Buyer and Sellers shall use commercially reasonable efforts to enter into such arrangements (such as subleasing, sublicensing or subcontracting) to provide to the Parties the economic and, to the extent permitted under applicable Law, operational equivalent of the transfer of such Purchased Asset and/or Assumed Liability to Buyer as of the Closing and the performance by Buyer of its obligations with respect thereto. Buyer shall, as agent or subcontractor for Sellers, perform and discharge fully the liabilities and obligations of Sellers thereunder from and after the Closing Date. Sellers shall pay to Buyer promptly upon receipt thereof all income, proceeds and other monies received by Seller to the extent related to such Purchased Asset.

(c) The provisions of this Section 1.9 shall not apply to any consent or approval required under any antitrust, competition or trade regulation Law, which consent or approval shall be governed by Section 4.3(c).

ARTICLE 2
REPRESENTATIONS AND WARRANTIES OF THE SELLERS

Subject to the exceptions and qualifications set forth in the Disclosure Schedule, Sellers make the following representations and warranties to Buyer.

Section 2.1 Organization and Qualification; Authority.

(a) Each Seller is duly incorporated, validly existing and in good standing, under the Laws of its jurisdiction of incorporation, has all requisite corporate power and authority to own or lease and operate its properties and assets and to carry on its business as presently conducted. Each Seller is duly qualified or licensed to do business and is in good standing in each jurisdiction where the ownership or operation of its properties and assets or the conduct of its business requires such qualification or license.

(b) Each Acquired Company is either duly organized or incorporated (as applicable), validly existing and, to the extent applicable, in good standing, under the Laws of its jurisdiction of organization or incorporation, has all requisite corporate (or similar) power and authority to own or lease and operate its properties and assets and to carry on its business as presently conducted. Each Acquired Company is duly qualified or licensed to do business and is in good standing in each jurisdiction where the ownership or operation of its properties and assets or the conduct of its business requires such qualification or license. On or prior to the date hereof, Sellers have made available to Buyer true and complete copies of each of the Acquired Companies' Organizational Documents. No Acquired Company is in violation of any of the provisions of its Organizational Documents. No Acquired Company is over-indebted, insolvent or unable to pay its debts as they fall due. No order has been made, no resolution has been passed or meeting convened and no request has been filed for the winding-up of any Acquired Company, or for a provisional liquidator to

be appointed in respect of any Acquired Company, and there are no Proceedings pending, or, to Sellers' Knowledge, threatened under applicable insolvency, bankruptcy, composition, moratorium, reorganisation, or similar laws and no events have occurred which would reasonably be expected to justify any such Proceedings.

Section 2.2 Authority; Binding Effect. Each Seller has full corporate power and authority to execute and deliver this Agreement and each of the other Transaction Documents to which it is a party, to perform its obligations hereunder and thereunder, and to consummate the transactions contemplated hereby and thereby. The execution, delivery and performance by each Seller of this Agreement, the Reorganization and each of the other Transaction Documents to which it is a party, and the consummation of the transactions contemplated hereby and thereby, has been duly and validly authorized by each Seller and no additional corporate authorization or consent by either Seller is required in connection therewith. This Agreement has been duly and validly executed and delivered by each Seller and, assuming the due authority, execution and delivery by Buyer, constitutes, and each of the other Transaction Documents to which a Seller is a party will be duly and validly executed and delivered by such Seller, and when so executed and delivered by the other parties thereto (assuming the due authority, execution and delivery by such other parties) shall constitute, a valid and legally binding obligation of such Seller (to the extent a party thereto), enforceable against such Seller (to the extent a party thereto) in accordance with their respective terms, except as enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, or moratorium Laws, other similar Laws affecting creditors' rights and general principles of equity affecting the availability of specific performance and other equitable remedies (regardless of whether enforcement is sought in a proceeding at law or in equity).

Section 2.3 Capitalization; Ownership; Subsidiaries.

(a) EII owns all of the authorized, issued and outstanding Equity Interests of Berna, which consist solely of the Shares. As of the date hereof and as of Closing, EII is the sole legal and beneficial owner of the Shares, free and clear of all Encumbrances, other than restrictions contained in Berna's Organizational Documents, or restrictions contained, and rights granted to Buyer, under this Agreement. The Shares are duly authorized and validly issued, fully paid-up, and have not been repaid in full or in party, nor have they been issued in violation of any preemptive or similar rights. EII has the full right and capacity to transfer the Shares to the Buyer. Upon Closing, the Buyer will be the sole legal and beneficial owner of the Shares, free and clear from any Encumbrances, other than restrictions contained in Berna's Organizational Documents, or restrictions contained, and rights granted to Buyer, under this Agreement. No Acquired Company has granted any outstanding options, warrants, rights or other securities convertible into or exchangeable or exercisable for Equity Interests, or any other commitments or agreements, whether contingent or not, providing for the issuance of additional Equity Interests, the sale of treasury shares, the repurchase or redemption, or voting of such Equity Interests, and there are no agreements of any kind which may obligate an Acquired Company to issue, purchase, register for sale, redeem, acquire, or vote any of Equity Interests. There are no resolutions regarding the issuance of Equity Interests of any of the Acquired Companies.

(b) The Acquired Companies do not own or have any right or obligation to acquire any Equity Interests of any other Person, other those Persons described on

Section 2.3(b) of the Disclosure Schedule (each such Person, a "**Subsidiary**," and collectively, the "**Subsidiaries**").

Section 2.4 Regulatory Approvals and Non-Governmental Consents.

(a) Except as set forth on Section 2.4(a) of the Disclosure Schedule (the "**Seller Regulatory Approvals**"), no Governmental Authorization or filing or notification is required to be obtained by a Seller or any Acquired Company from, or to be given by a Seller or any Acquired Company to, or made by a Seller or any Acquired Company with, any Governmental Body or securities exchange, as a result of the execution, delivery or performance by Sellers of this Agreement or the other Transaction Documents, or the consummation by Sellers of the transactions contemplated hereby or thereby.

(b) Except as set forth on Section 2.4(b) of the Disclosure Schedule (the "**Seller Non-Governmental Consents**"), no consent, notice, approval, waiver or authorization is required to be obtained by a Seller or any Acquired Company from, or to be given by a Seller or any Acquired Company to, or made by a Seller or any Acquired Company with, any Person other than a Governmental Body or securities exchange, as a result of the execution, delivery or performance by a Seller or any Acquired Company of this Agreement or the other Transaction Documents, or the consummation by Sellers of the transactions contemplated hereby or thereby.

Section 2.5 Noncontravention. The execution, delivery and performance by Sellers of this Agreement, and the execution, delivery and performance by Sellers and the Acquired Companies of the Reorganization and other Transaction Documents to which a Seller or any Acquired Company is a party, and the consummation by Sellers and the Acquired Companies of the transactions contemplated hereby and thereby, do not and will not (a) violate any provision of the Organizational Documents of either Seller or any Acquired Company; (b) assuming the receipt of all Seller Regulatory Approvals and Seller Non-Governmental Consents, (i) conflict with, or result in the breach of, or constitute a default under, or result in the termination, cancellation, modification or acceleration (whether after the filing of notice or the lapse of time or both) of any right or obligation of any Acquired Company under, or result in a loss of any benefit to which any Acquired Company is entitled under (1) any Assigned Contract, or (2) any Material Contract to which an Acquired Company is a party or by which any of its properties or assets are bound, or (ii) result in the creation of any Encumbrance upon any of the Purchased Assets or any of the properties or assets of an Acquired Companies; or (c) assuming the receipt of all Seller Regulatory Approvals and Seller Non-Governmental Consents, violate or result in a breach of or constitute a default under any Law or Governmental Authorization to which Sellers or any Acquired Company or any of the Purchased Assets or any of the Acquired Companies' properties or assets are subject, would reasonably be expected to be, individually or in the aggregate, material to the Acquired Companies or the conduct of the Business, impair in any material respect the ability of either Seller to perform its obligations under this Agreement or the Transaction Documents to which either Seller is a party, or prevent or materially impede or delay the consummation of any of the transactions contemplated by this Agreement or the Transaction Documents.

Section 2.6 Title to and Sufficiency of the Assets.

(a) Except as set forth on Section 2.4(a) of the Disclosure Schedule, the Acquired Companies have good and marketable title to or a valid leasehold interest in the assets reflected in the Financial Statements, free and clear of all Encumbrances,

other than Permitted Encumbrances, except for the properties and assets that are described in Section 2.12 (*Intellectual Property*) and Section 2.11 (*Real Property*), which such properties and assets are solely subject to the representations set forth in the respective Sections. Neither Seller nor any of their Affiliates (other than the Acquired Companies) holds any properties, rights or assets (other than the Shares) of any of the Acquired Companies.

(b) Except as set forth on Section 2.4(b) of the Disclosure Schedule, ETHI has good and marketable title to or a valid leasehold interest in all of the Purchased Assets, free and clear of all Encumbrances, other than Permitted Encumbrances, except for the properties and assets that are described in Section 2.12 (*Intellectual Property*) and Section 2.11 (*Real Property*), which such properties and assets are solely subject to the representations set forth in the respective Sections.

(c) The Purchased Assets, together with (i) the services provided and rights granted to Buyer and its Affiliates under this Agreement and the other Transaction Documents, (ii) the real property and general corporate, financial, financing, administrative and support services and functions provided by Sellers and its Affiliates to the Business prior to the Closing, (iii) the assets, rights and properties described in clauses (i) through (x) of the definition of "Excluded Assets" and (iv) the types of assets listed on Section 2.6(c) of the Disclosure Schedules, constitute all of the rights, property and assets used by Sellers and their Affiliates and necessary to conduct the Business as conducted by Sellers and their Affiliates.

Section 2.7 Financial Statements and Financial Matters. Sellers have made available to Buyer copies of (i) the unaudited combined balance sheet of the Business (including Berna) as of September 30, 2022 (the "**Recent Balance Sheet**" and the date of the Recent Balance Sheet, the "**Recent Balance Sheet Date**") and the related unaudited combined statement of income of the Business for the 9-month period then ended (collectively, the "**Interim Financial Statements**"), (ii) the unaudited combined balance sheet and the related unaudited combined statement of income of the Business at and for the fiscal year ended December 31, 2021 (collectively, the "**Annual Financial Statements,**" and, collectively with the Interim Financial Statements, the "**Financial Statements**"), and (iii) the audited stand-alone annual financial statements of Berna for the business years ended on December 31, 2020 and December 31, 2021 (the "**Berna Financial Statements**"). The Financial Statements present fairly in all material respects the combined financial condition and combined results of operations of the Business as of the times and for the periods referred to therein in accordance with GAAP, consistently applied (subject to changes resulting from audited adjustments, the absence of footnotes and other presentation items and, in the case of the Interim Financial Statements, to changes resulting from year-end adjustments). The Berna Financial Statements have been prepared in accordance with applicable Swiss law (the Swiss Code of Obligations), applied on a consistent basis with the preceding accounting periods (except as may be indicated in the notes thereto). From the Recent Balance Sheet Date until the date hereof, Berna has conducted its business in the Ordinary Course of Business. The accounts, books, registers, ledgers, records and supporting documents of Berna have in all material respects been kept in compliance with applicable Laws and regulations and accounting principles and such accounts, books, registers, ledgers, records and supporting documents accurately and completely reflect all transactions and other matters required to be reflected therein.

Section 2.8 Compliance with Law; Regulatory Matters.

(a) **Generally**. Except with respect to compliance with the following Laws (which are not addressed in this Section 2.8(a)): (i) Health Care Laws, which are subject to Section 2.8(b), (ii) Environmental Laws, which are subject to Section 2.20 below, (iii) Laws relating to employee, labor and benefits matters, which are subject to Section 2.18 and Section 2.19 below, (iv) Laws applicable to Taxes and Tax matters, which are subject to Section 2.10 and Section 2.19 below, and (v) anti-bribery Laws, which are subject to Section 2.22 below, each Seller in connection with their respective operation of the Business and each of the Acquired Companies is currently, and during the Lookback Period has been, in compliance, in all material respects, with all Laws applicable to it, the Business, the Purchased Assets, the development of CHIK VLP, or their Exploitation of any Product, and, during the Lookback Period, neither Seller in connection with its operation of the Business, and none of the Acquired Companies, has received any notice or other communication from any Governmental Body or other Person regarding any actual or alleged violation, in any material respect, of any Law applicable to Sellers' operation of the Business, any of the Purchased Assets, any Acquired Company, any Acquired Company's business, properties or assets, the development of CHIK VLP or the Exploitation of any Product.

(b) **Health Care Laws**. Except as set forth on Section 2.8(b) of the Disclosure Schedule:

(i) Each of (A) Sellers and Sellers' Affiliates, and, to Sellers' Knowledge [***], any third party, in connection with the operation of the Business, and (B) the Acquired Companies have complied at all times during the Lookback Period with all applicable Health Care Laws.

(ii) Neither (1) Sellers, nor (2) Sellers' Affiliates, nor (3) to Sellers' Knowledge [***], any third party, in each case (1) to (3) in connection with the operation of the Business, nor any Acquired Company, are subject to any investigation with respect to an alleged violation of any applicable Health Care Law, no written threat of such investigation has been received by Sellers or their Affiliates, and to Sellers' Knowledge no such investigation has been otherwise threatened against Seller or their Affiliates or any third party.

(iii) There are no Proceedings pending or threatened in writing and, to Sellers' Knowledge, there are no Proceedings otherwise threatened, with respect to an actual or alleged violation by (A) either Seller in connection with the operation of the Business or (B) any Acquired Company in each case (A) or (B) of any applicable Health Care Law. To Sellers' Knowledge [***], there are no Proceedings pending or threatened, with respect to an actual or alleged violation by a third party of any applicable Health Care Law in connection with the operation of the Business.

(iv) Section 2.8(b)(iv) of the Disclosure Schedule sets out details of all Product Registrations included within the Purchased Assets together with all Product Registrations owned by the Acquired Companies. The Product Registrations included within the Purchased Assets together with all other

Product Registrations owned by the Acquired Companies collectively constitute all Product Registrations with respect to the Transferring Products, and each of such Product Registrations is in full force and effect. All of the Transferring Products are being, and at all times during the Lookback Period have been, Exploited in compliance with the applicable Product Registrations. All maintenance fees, annuity fees, or renewal fees for such Product Registrations that are due and payable prior to Closing have been paid or will be paid prior to Closing. Section 2.8(b)(iv) of the Disclosure Schedule sets out each filing, payment, and action that must be taken on or before July 31, 2023 in order to maintain the Product Registrations.

(v) Neither Sellers nor the Acquired Companies have granted any rights of reference under the Product Registrations with respect to the Transferring Products to any third party.

(vi) Sellers have made available to Buyer true and complete copies of (A) all material filings with the FDA or equivalent Governmental Body relating to any of the Transferring Products, (B) all material correspondence with the FDA or equivalent Governmental Body relating to any of the Transferring Products, and (C) all material data, information, results, analyses, trial protocols, publications, and reports relating to the safety and efficacy of the Transferring Products.

(vii) All applications, notifications, submissions, information, claims, reports and statistics and other data, utilized as the basis for, or submitted in connection with, any Product Registration for any Transferring Product, when submitted to the FDA or such other applicable Governmental Body were true, complete and correct in all material respects as of the date of submission and any necessary or required updates, changes, corrections or modifications to such applications, submissions, information and data have been submitted to the FDA or such other applicable Governmental Body.

(viii) No Acquired Company or any officer, director, employee or, to Sellers' Knowledge, agent of any Acquired Company, and, in connection with the operation of the Business, no Seller or any officer, director, employee or, to Sellers' Knowledge, (x) agent of either Seller or third party in connection with the operation of the Business (A) has committed any act, or made a statement, or failed to make a statement, that could reasonably be expected to provide a basis for the FDA or any other Governmental Body to invoke FDA's policy respecting "Fraud, Untrue Statements of Material Facts, Bribery, and Illegal Gratuities" set forth in 56 Fed. Reg. 46191 (September 10, 1991) or any similar policy or applicable Law; (B) has been charged with or convicted of any criminal offense relating to the delivery of an item or service under Medicare, Medicaid, TRICARE or any similar government health care program whether in the United States or another jurisdiction (collectively, "**Federal Health Care Programs**"); (C) has been subject to, or convicted of any crime or engaged in any conduct that would reasonably be expected to result in, debarment, exclusion, or suspension from participation in any Federal Health Care Program, or otherwise under Section 306 of the FDCA or any similar applicable Law, and no Proceeding is pending or, to Sellers' Knowledge, is threatened, relating to such debarment or conviction of any Acquired Company or any such other Person; (D) has had a civil monetary

penalty assessed against it, him or her under Section 1128A of the Social Security Act, codified at Title 42, Chapter 7, of the United States Code or any similar applicable Law; or (E) to Sellers' Knowledge, is the target or subject of any current or potential investigation relating to any Federal Health Care Program-related offense or any similar applicable Law.

(ix) In connection with the operation of the Business, neither Seller, nor any Acquired Company nor, to Sellers' Knowledge, any Representative or third party contractor of either Seller or any Acquired Company (but solely to the extent related to any Transferring Product) has received, and there is no threat of, any warning letter or untitled letter, report of inspectional observations, including FDA Form 483, establishment inspection reports, notices of violation, enforcement notices or other documents from any Governmental Body or any Review Board alleging a lack of compliance by either Seller or any Acquired Company or any such Representative or third party contractor of either Seller or any Acquired Company with any applicable Law or Product Registration in connection with the Transferring Products.

(x) Except as set forth on Section 2.8(b)(x) of the Disclosure Schedule, no Transferring Product has been recalled, withdrawn, suspended or discontinued (whether voluntarily or otherwise) and no proceedings (whether completed or pending) seeking the recall, withdrawal, suspension, discontinuation, or seizure of any such Transferring Product are pending, or to the Sellers' Knowledge, threatened, against either Seller or any Acquired Company, nor have any such proceedings been pending at any time and, to the Sellers' Knowledge, no facts or circumstances exist that would reasonably be expected to give rise to such a recall, withdrawal, suspension, discontinuation, or seizure of any Transferring Product.

(xi) In connection with the operation of the Business, neither Seller nor any Acquired Company has received any written notice or other written correspondence that a Governmental Body has commenced or, to Sellers' Knowledge, threatened to commence proceedings to withdraw the licensure or approval of any Transferring Product or otherwise suspend, revoke or materially amend any Product Registration.

(xii) All preclinical and clinical studies conducted or sponsored by or on behalf of either Seller or any Acquired Company in connection with the Business are being and have been conducted in compliance with the applicable protocols, procedures and controls, and applicable Health Care Laws. In connection with the operation of the Business, no clinical trial conducted or sponsored by or on behalf of either Seller or any Acquired Company has been terminated or suspended by the FDA or any other applicable Governmental Body or any Review Board, and neither the FDA nor any other applicable Governmental Body or any Review Board has commenced or, to Sellers' Knowledge, threatened to initiate, any action to place a clinical hold order on, or otherwise terminate, delay, suspend, materially modify, or materially restrict, any proposed or ongoing clinical trial conducted or proposed to be conducted by or on behalf of any Acquired Company or either Seller in connection with the Business. In connection with the operation of the Business, neither Seller nor any Acquired Company has received any written notice or other written communication from FDA or any other applicable

Governmental Body or any Review Board with respect to any ongoing pre-clinical or clinical studies requiring the termination, suspension, or material modification of such studies. With respect to any clinical trial conducted by or on behalf of either Seller any of the Acquired Companies with respect to any Transferring Product in connection with or as the basis for any submission to the FDA or other comparable Governmental Body of any Seller Regulatory Approval or application therefor, (A) such clinical trials have been properly registered to the extent required under all applicable Health Care Laws, including on clinicaltrials.gov if required, and (B) the results of all such clinical trials have been disclosed to the extent required under all applicable Health Care Laws, in each case including Section 402 of the PHSA. To Sellers' Knowledge, none of the clinical investigators involved in the Exploitation of the Products or development of CHIK VLP by or on behalf of Seller or any Acquired Company has been or is disqualified, restricted or otherwise sanctioned by FDA, the Department of Health and Human Services, or any other applicable Governmental Body. Except as set forth on Section 2.8(b)(xii) of the Disclosure Schedule, there are no outstanding or unfulfilled post-marketing clinical trial commitments or obligations relating to the Products. Except as set forth on Section 2.8(b)(xii) of the Disclosure Schedule there have not been, during the Lookback Period, any clinical trials of any Transferring Product conducted or permitted to be conducted by or on behalf of a Seller or any Affiliate of Seller.

(xiii) During the Lookback Period, each Transferring Product has been manufactured in accordance with all applicable Law.

Section 2.9 Permits and Licenses. Sellers and/or the Acquired Companies hold, and at all times during the Lookback Period have held, all material Governmental Authorizations necessary to own, lease or operate their assets and properties and to operate the Business as currently conducted or as conducted at such time during the Lookback Period, as applicable. All of such Governmental Authorizations are in full force and effect and none of Sellers or the Acquired Companies is, or during the Lookback Period has been, in material default under or violation of, any of such Governmental Authorizations, and, to Sellers' Knowledge, no event has occurred that would reasonably be expected to give any Governmental Body any right of termination, amendment or cancellation of any such Governmental Authorization. During the Lookback Period, none of Sellers or the Acquired Companies has received any written notice or other written communication from any Governmental Body that such Governmental Body intends to or is threatening to revoke, suspend, modify or limit any material Governmental Authorization necessary to own, lease or operate their assets and properties and to operate the Business as currently conducted.

Section 2.10 Taxes. Except as set forth in Section 2.10 of the Disclosure Schedule:

(a) Sellers and the Acquired Companies have timely filed all income Tax Returns and all other material Tax Returns which are required to be filed by them (taking into account timely extensions), and all such Tax Returns were correct and complete in all material respects;

(b) all Taxes due and owing by Sellers or the Acquired Companies (whether or not shown as due on a Tax Return) have been fully paid, and there are no Encumbrances with respect to Taxes on any of the Purchased Assets or any of the assets of the Acquired Companies other than Permitted Encumbrances;

(c) all Taxes which Sellers or the Acquired Companies are obligated to withhold from amounts owing to any employee, creditor, equity holder or third-party and remit to any Tax authority have been withheld and timely remitted, or, if not yet due, set aside in accounts for such purposes and accrued by the applicable Seller or Acquired Company;

(d) no claim has been made by any Tax authority in a jurisdiction where either Seller or any Acquired Company does not file Tax Returns that such Seller or Acquired Company is or may be subject to taxation by that jurisdiction;

(e) no deficiency or proposed adjustment which has not been paid or resolved for any material amount of Tax has been asserted or assessed by any Tax authority against either Seller or any Acquired Company;

(f) neither Seller nor any Acquired Company has waived any statute of limitations with respect to any Taxes or consented to extend the time in which any Tax may be assessed or collected by any Tax authority, which waiver or extension is still in effect;

(g) there are no ongoing or pending Tax audits by any Tax authority of any Taxes or Tax Returns of either Seller or any Acquired Company, no administrative or judicial Tax Proceedings are being conducted or are pending with respect to either Seller or any Acquired Company and there is no power of attorney given or binding upon either Seller or any Acquired Company with respect to Taxes;

(h) no Acquired Company is a party to or bound by, or has any obligation under any Tax sharing agreement;

(i) neither Buyer nor any Acquired Company will be required to include any item of income in, or exclude any item of deduction from, taxable income for any taxable period (or portion thereof) ending after the Closing Date as a result of any (i) use of an improper method of accounting or a change in method of accounting for a Pre-Closing Tax Period, (ii) "closing agreement" as described in Code §7121 (or any corresponding or similar provision of state, local, or non-U.S. income Tax Law) executed on or prior to the Closing Date, (iii) intercompany transaction or excess loss account described in Treasury Regulations under Code §1502 (or any corresponding or similar provision of state, local, or non-U.S. income Tax Law), (iv) installment sale or open transaction disposition made on or prior to the Closing Date, (v) election under Code §108(i), (vi) debt instrument that was acquired with "original issue discount" as defined in Code §1273(a) or is subject to the rules set forth in Code §1276, (vii) application of Code §951, 951A or 965 to any interest held in a "deferred foreign income corporation" or in a "controlled foreign corporation" (as respectively defined in code §§965 and 957) with respect to income earned or recognized or payments received on or prior to the Closing Date, (viii) ownership of "United States property" (as defined in Code §956) by any "controlled foreign corporation" (as defined in Code §957) on or prior to the Closing Date, or (ix) "domestic use election" under Treasury Regulation §1.1503(d)-6;

(j) no Acquired Company has distributed stock of another Person, or has had its stock distributed by another Person, in a transaction that was purported or intended to be governed in whole or in part by Code §355 or Code §361; and

(k) no Acquired Company is or has been a party to (i) any "listed transaction," as defined in Code §6707A(c)(2) and Treasury Regulations §1.6011-4(b)(2), (ii) a "transaction of interest," within the meaning of Treasury Regulations

§1.6011-4(b)(6), or (C) any transaction that is "substantially similar" (within the meaning of Treasury Regulations §1.6011-4(c)(4)) to a "listed transaction" or "transaction of interest";

(l) no Acquired Company has, or has had (during any taxable period remaining open for the assessment of Tax by any Tax authority under its applicable statute of limitations), any permanent establishment or other place of business in any country outside the country of its organization;

(m) no Acquired Company organized under the laws of a non-U.S. jurisdiction owns any interest in "United States real property" with the meaning of Code §897 or any "United States property" that could, if such Acquired Company were treated as a "controlled foreign corporation" within the meaning of Code §957, result in an inclusion of income under Code §956;

(n) no Acquired Company has ever been a member of any group that files a Tax Return on a consolidated, combined, unitary or similar basis. No Acquired Company is liable for Taxes of any other Person as a result of successor liability, transferee liability, joint or several liability (including pursuant to Treasury Regulation §1.1502-6 or any similar provision of state, local, or non-U.S. applicable Law), contractual liability, or otherwise;

(o) no Acquired Company is the beneficiary of any Tax exemption, Tax holiday or other Tax incentive that would terminate or be subject to recapture or clawback by reason of the transactions contemplated hereby; and

(p) each Acquired Company is, and has been since at least October 4, 2018, classified as a corporation for United States federal income tax purposes.

This Section 2.10 and Section 2.19 contain the sole representations and warranties of Sellers with respect to Taxes or Tax matters.

Section 2.11 Real Property.

(a) Section 2.11(a) of the Disclosure Schedule sets forth a true, complete and accurate list of each parcel of real property owned by any of the Acquired Companies as of the date hereof (collectively, the "**Owned Real Property**") and the record owner of such Owned Real Property. The applicable Acquired Company has good, marketable and full and valid legal and beneficial title to all of the Owned Real Property, free and clear of all Encumbrances except for Encumbrances disclosed in the Disclosure Schedule or the relevant excerpt from the land register, and the right to use the Owned Real Property for the conduct of their businesses as presently conducted pursuant to the applicable laws. No applications to land registers for registration are pending with respect to the Owned Real Property. There are no existing or threatened restrictions to the continued use of the Owned Real Property or any circumstances likely to result in such restriction. The Owned Real Properties and all buildings and constructions owned, leased or used by any of the Acquired Companies (i) comply with all material applicable Environmental Laws and other regulations, building, zoning and similar requirements, and (ii) do not contain, and are not affected by, any hazardous substances.

(b) Section 2.11(b) of the Disclosure Schedule sets forth a list of each parcel of real property leased by a Seller primarily in connection with the operation of the Business (the "**Leased Real Property**"). Sellers have delivered or made available to Buyer copies of each of the leases for the Leased Real Property listed on Section

2.11(b) of the Disclosure Schedule, in each case, as amended, modified or supplemented and in effect as of the date hereof.

(c) The Owned Real Property comprises all of the real property used or held for use in connection with and necessary for the conduct of the Business in the Ordinary Course of Business as currently conducted by Sellers and the Acquired Companies. To Sellers' Knowledge, all Owned Real Property is structurally sound, in good operating condition in all material respects and in a state of good and working maintenance and repair in all material respects, ordinary wear and tear excepted. During the Lookback Period, neither Sellers nor any Acquired Company has received any written notice of any condemnation, expropriation, eminent domain or similar proceeding materially affecting all or any part of the Owned Real Property or Leased Real Property. None of the Owned Real Property is currently registered in the register of contaminated sites (*Kataster der belasteten Standorte in Switzerland*).

Section 2.12 Intellectual Property.

(a) Section 2.12(a) of the Disclosure Schedule lists all of the Intellectual Property Assets and all Intellectual Property Rights that are owned by any of the Acquired Companies, in each case, that are registered or subject to an application for registration (collectively, "**Business Registered IP**"), categorized as follows: (i) issued patents and patent applications, (ii) trademark registrations and applications, (iii) copyright registrations and applications, and (iv) domain names, and lists for each such item of Business Registered IP (A) the legal and record owner(s) thereof, (B) the jurisdictions in which such item of Business Registered IP has been filed and, as applicable, registered, issued or granted and, in the case of domain names and social media tags, handles and other identifiers, the registrar and the social media platform, (C) the filing and, as applicable, the registration, issuance or grant dates, and (D) the application or serial, and, as applicable, the registration, issuance and grant numbers. All Business Registered IP that is issued, granted or registered is valid, enforceable and in full force and effect and all Business Registered IP that is the subject of an application for issuance, grant or registration is valid and subsisting. All maintenance fees, annuity fees, or renewal fees for such Business Registered IP that are due and payable prior to Closing have been paid or will be paid prior to Closing. Section 2.12(a) of the Disclosure Schedule sets out each filing, payment, and action that must be taken on or before July 31, 2023 in order to maintain the Business Registered IP. All Business Registered IP was, and has been, applied for, registered, filed, and maintained in accordance with applicable Law.

(b) (i) ETHI is the sole owner of all right, title, and interest in and to the Intellectual Property Assets and has the right to assign to Buyer the Intellectual Property Assets without the consent of any third party, and one or more Acquired Companies are the sole owners of all right, title, and interest in and to any other Owned Business Intellectual Property, and (ii) ETHI or one or more Acquired Companies (in each case through the Intellectual Property Agreements) have a valid and enforceable license, sublicense or other similar Contract right to all Licensed Business Intellectual Property used or held for use in the Exploitation of the Transferring Products and the operation of the Businesses as currently Exploited and operated. Section 2.12(b) of the Disclosure Schedule lists all of the Licensed Intellectual Property that is registered or subject to an application for registration.

(c) (i) To Sellers' Knowledge, the conduct of the Business as currently conducted does not infringe, misappropriate, dilute or otherwise violate the

Intellectual Property Rights of any Person; and as conducted during the Lookback Period did not infringe, misappropriate, dilute or otherwise violate the Intellectual Property Rights of any Person; (ii) during the Lookback Period neither of Sellers or Acquired Companies have received any written communication relating to any actual, alleged, or suspected infringement, misappropriation, or violation of any Intellectual Property Right of any third party as a result of the conduct of the Business; and (iii) to Sellers' Knowledge no Person is infringing, misappropriating or otherwise violating any Owned Business Intellectual Property, the Licensed Business Intellectual Property, or the Intellectual Property Assets.

(d) The Owned Business Intellectual Property, Licensed Business Intellectual Property, and Intellectual Property Assets represent the only Intellectual Property Rights owned or licensed by Sellers and used by or on behalf of Sellers and the Acquired Company for the conduct of the Business as currently conducted and as conducted during the Lookback Period.

(e) (i) No litigation, adversarial proceeding, or other challenge or claim relating to the Owned Business Intellectual Property or Intellectual Property Assets is pending or has been threatened in writing (including any claim challenging or seeking to deny or restrict the inventorship, ownership, legality, validity, enforceability, priority, scope, use, right to use, right to register, or registrability of the Owned Business Intellectual Property, Licensed Business Intellectual Property, or Intellectual Property Assets), and, to the Seller's Knowledge, no such Proceeding has otherwise been threatened, (ii) Sellers have not been notified that any litigation, adversarial proceeding, or other challenge or claim relating to the Licensed Business Intellectual Property is pending or has been threatened; (iii) there is no outstanding judgment, order, writ, injunction or decree relating to any of the Owned Business Intellectual Property, Licensed Business Intellectual Property, or Intellectual Property Assets.

(f) Except as set forth in Section 2.12(f) of the Disclosure Schedule, neither the Sellers nor the Acquired Companies are obliged to indemnify, defend, hold harmless, or reimburse any third party with respect to, or otherwise assume or discharge or otherwise take responsibility for, any existing or potential Intellectual Property Right infringement, misappropriation, or similar claim in connection with the performance of the Business or the research, development, manufacture, or commercialization of any Transferring Product.

(g) Except as set forth in Section 2.12(g) of the Disclosure Schedule, to Seller's Knowledge, no funding, facilities or resources of any Governmental Body or any university, college, other educational institution or research center were used in the creation or development of the Owned Business Intellectual Property, Licensed Business Intellectual Property, or Intellectual Property Assets and no Governmental Body or any university, college, other educational institution or research center has any claim or right in or to any Owned Business Intellectual Property, Licensed Business Intellectual Property, or Intellectual Property Assets or any clinical or nonclinical data related to the Transferring Product or the Owned Business Intellectual Property, Licensed Business Intellectual Property, or Intellectual Property Assets. Except as set forth in Section 2.12(g) of the Disclosure Schedule, to Sellers' Knowledge, no current or former employee, consultant or independent contractor, who was involved in, or who contributed to, the creation or development of any Owned Business Intellectual Property or the Intellectual Property Assets, has performed services for a Governmental Body, a university, college, or other

educational institution, or a research center, during a period of time during which such employee, consultant or independent contractor was also performing services used in the creation or development of the Owned Business Intellectual Property or the Intellectual Property Assets.

(h) During the Lookback Period Seller and its Affiliates have not, directly or indirectly, either for itself or through any other Person, (i) engaged in, or otherwise knowingly assisted any Person engaging in, the development, manufacture, or commercialization of any product (other than the Transferring Product) for the vaccination or active immunization against the same indication as a Transferring Product, and (ii) neither Seller or its Affiliates have commenced any research or development activities or engaged in any negotiations or outreach with the intention to acquire assets or a business intended towards, or to enter into a collaborative arrangement intended to result in, the development, manufacture, or commercialization of any product (other than the Transferring Product) for the vaccination or active immunization against the same indication as a Transferring Product.

(i) Seller and its Affiliates have taken reasonable measures to maintain in confidence all trade secrets and other confidential information included in the Owned Business Intellectual Property, Licensed Business Intellectual Property, and Intellectual Property Assets. To Seller's Knowledge, none of such trade secrets or confidential information included in the Owned Business Intellectual Property, Licensed Business Intellectual Property, and Intellectual Property Assets have been disclosed to any Person by Seller or its Affiliates except pursuant to commercially reasonable non-disclosure or license agreements.

(j) The Acquired Companies have obtained from (i) each of their current and former employees and consultants, and (ii) all other persons who have had access to any material confidential information of such Acquired Companies or have been engaged by such Acquired Companies, in each case (i) and (ii), a written Contract which includes commercially reasonable confidentiality and restriction on use terms intended to maintain the confidential status and limit the use of such confidential information.

Section 2.13 Contracts and Conduct of the Business.

(a) Section 2.13(a) of the Disclosure Schedule sets forth a list as of the date hereof of all of the following Contracts that are either Assigned Contracts or to which any Acquired Company is a party or by which any of the Purchased Assets or an Acquired Company is bound other than (1) purchase orders or similar documentation with respect to purchases or sales entered into in the Ordinary Course of Business and (2) Benefit Plans:

(i) Contracts where the performance thereunder involves aggregate consideration payable in excess of $[***] per annum, other than "shrink wrap" or "click through" license agreements for standard software products, and licenses or restricted use provisions that arise out of the purchase of off-the-shelf reagents from suppliers or through catalogs;

(ii) Contracts which contain covenants which restrict or limit the ability of ETHI or any Acquired Company to compete in any line of business or with any Person or in any geographic area during any time period, or that

contain any exclusivity, standstill or non-solicitation obligation binding on ETHI or any of the Acquired Companies;

(iii) Contracts under which ETHI or any Acquired Company has made or will make, directly or indirectly, any advance, loan, extension of credit or capital contribution to, or other investment in, any other Person or Contracts relating to the making of any such advance, loan, extension of credit, capital contribution or other investment;

(iv) mortgages, pledges or security agreements or similar Contracts or arrangements constituting an Encumbrance upon the Purchased Assets or the assets or properties of any Acquired Company, other than Permitted Encumbrances;

(v) the Intellectual Property Agreements and all other licenses, sublicenses and other agreements by or through which other Persons grant an Acquired Company or an Acquired Company grants any other Persons any exclusive or non-exclusive rights or interests in or to any Intellectual Property Rights related to the Business (other than "shrink wrap" or "click through" license agreements for commercially available software products, and licenses or restricted use provisions that arise out of the purchase of off-the-shelf reagents from suppliers or through catalogs);

(vi) any material joint venture, strategic alliance, partnership or similar Contract with any third party;

(vii) Contracts for the production, manufacture, processing, filling, finishing, packaging, labeling, shipping, holding, or supply of any Transferring Product or the performance of any clinical trial-related services with respect to any Transferring Product;

(viii) Government Contracts;

(ix) any personal property lease or Contract under which ETHI or an Acquired Company is lessee of, or holds or operates any personal property owned by any other party, for which the annual rent exceeds $[***];

(x) any written Contract for the employment of any officer, individual employee or other person on a full-time or consulting basis providing for fixed compensation in excess of $[***]per annum;

(xi) any collective bargaining Contract with any labor union;

(xii) any Contract that requires ETHI or an Acquired Company to make capital expenditures to a third party in excess of $[***], for any single project, or in excess of $[***], in the aggregate that have not been made on or prior to the date hereof;

(xiii) any Contract that requires ETHI or an Acquired Company to purchase its total requirements of any product from a third Person; and

(xiv) any Contract which provides the counterparty (other than another Acquired Company) with a power of attorney to bind an Acquired Company.

(b) True and correct copies of all written Contracts and description of all oral contracts (if any) which are listed or should be listed on Section 2.13(a) of the

Disclosure Schedule (collectively, "**Material Contracts**" and each, individually, a "**Material Contract**"), together with all schedules, exhibits, appendices, amendments, modifications, waivers or other changes thereto have been disclosed or made available to Buyer. Each Material Contract (i) constitutes a valid and binding obligation of ETHI or the applicable Acquired Company(ies), and, to Sellers' Knowledge, constitutes a valid and binding obligation of the other counterparties, and (ii) is in full force and effect, subject to bankruptcy, insolvency, moratorium or other similar Laws affecting or relating to the enforcement of creditors' rights generally, and general principles of equity. Neither ETHI nor the applicable Acquired Company nor, to Sellers' Knowledge, any counterparty, is in material breach of or material default under any such Material Contract. As of the date of this Agreement, no Seller or any Acquired Company has received any written claim or notice of material breach of, or material default by ETHI or an Acquired Company under, any such Material Contract.

(c) The Contracts that are either Assigned Contracts or to which any Acquired Company is a party are the only third-party contracts that are used by Sellers and the Acquired Companies exclusively for the conduct of the Business as currently conducted and are necessary for the conduct of the Business as currently conducted. Except as set forth on Section 2.4(b) of the Disclosure Schedule, none of the Contracts to which any Acquired Company is a party can be, or is, terminated or modified, nor are any Adverse Consequences triggered under it, upon a change of control or due to the transactions contemplated by this Agreement.

(d) No customer who purchases any Product from the Acquired Companies or the Sellers or any of the Sellers' Affiliates has stopped/indicated an intention to stop purchasing Products, reduce the purchasing of Products, or change the terms on which it is prepared to acquire such Products, to the extent such cessation, reduction, or change will have a Material Adverse Effect.

(e) Except as set forth on Section 2.13(e) of the Disclosure Schedule, during the Lookback Period there have been no stock-outs or shortages of stock of any Product that have led to deliveries of Product not being able to be made to any customer.

(f) All Transferring Inventory that relates to CHIK VLP was manufactured in accordance with all applicable Law, including such applicable Law related to good manufacturing practices, and is in compliance with all applicable quality specifications for the manufacture, release, and final testing of CHIK VLP and its components.

(g) The quantity of finished CHIK VLP included in the Transferring Inventory is sufficient to conduct and complete those clinical trials of CHIK VLP as of the date of this Agreement. Such clinical trials are listed on Section 2.13(g) of the Disclosure Schedule.

(h) All Product comprised within the Transferring Inventory is of a quality and quantity useable and saleable in the ordinary course of business, is not obsolete, defective, or damaged, is not held on a consignment basis, and is labelled in accordance with the relevant Product Registration.

(i) All finished and work in progress Transferring Product comprised in the Transferring Inventory has been manufactured in accordance with applicable Law, including such applicable Law related to good manufacturing practices, and is in

compliance with all applicable quality specifications for the manufacture, release, and final testing of such Transferring Inventory and its components.

(j) All:

(i) finished Product comprised within the Transferring Inventory has a minimum remaining shelf-life [***]; and

(ii) bulk drug substance comprised within the Transferring Inventory has a remaining shelf-life [***].

(k) Subject to applicable reserves in the Financial Statements and Product in Transferring Inventory (if any) that have then been placed in quarantine in the Ordinary Course of Business, no Product comprised within the Transferring Inventory has damage to its packaging, is unsealed, or is in an unusable condition. The volume of Product within the Transferring Inventory is consistent with expected orders and demand such that Buyer can be reasonably expected to sell such Product prior to the depletion of its shelf life below a level that would be acceptable to relevant wholesalers.

(l) No Transferring Product comprised within the Transferring Inventory is adulterated or misbranded within the meaning of the FDCA or equivalent Law in any relevant jurisdiction, or is an article which may not, under the provisions of Section 404, 505, or 512 of the FDCA or Section 351 of the PHSA, be introduced into interstate commerce.

(m) Except as set forth on Section 2.13(m) of the Disclosure Schedule, the quantity of (i) finished Product, (ii) work-in-progress and (iii) [***].

Section 2.14 Government Contracts. Sellers have complied with all terms, conditions, and applicable legal requirements of each Government Contract included among the Assigned Contracts (each a "**Business Government Contract**"), have not received notice of any actual or alleged violation or breach of any such terms, conditions, or applicable legal requirements of any Business Government Contract, and no events have occurred which would reasonably be expected to result in any actual or alleged violation or breach of any such terms, conditions, or applicable legal requirements of any Business Government Contract. All representations, certifications and statements made or submitted with respect to each Business Government Contract were current, accurate, and complete as of the date made or submitted and were made or submitted by an authorized representative of Sellers, and Sellers have revised or updated such representations, certifications and statements as required. Neither Sellers nor any of its owners, officers, directors, or employees, nor to Sellers' Knowledge, consultants, agents, or representatives, is currently debarred or suspended, or proposed for debarment or suspension, or otherwise ineligible to do business with any Governmental Body, and to Sellers' Knowledge, there are no circumstances that would be reasonably expected to warrant the institution of debarment or suspension proceedings against any of them. Except as set forth on Section 2.14 of the Disclosure Schedule, to the Knowledge of Sellers, none of the Intellectual Property Assets have been developed under any contract with the U.S. Government such that some or all of them are subject to the restrictions of the Bayh-Dole Act or other applicable federal regulations that apply to government funded intellectual property. All Intellectual Property Assets previously delivered to the U.S. Government related to the Purchased Assets have been marked with the

appropriate restrictive markings and Sellers have complied in all material respects with all applicable legal and contractual requirements relating to the placement of legends or assertion of restrictive markings on any Intellectual Property Assets delivered or provided to the U.S. Government.

Section 2.15 Insurance. Sellers in connection with the operation of the Business, and any Acquired Company have adequate insurance coverage in line with market practice for companies conducting a similar business. All insurance policies maintained by Sellers or the Acquired Companies in connection with the Business provide an adequate insurance coverage of the Business in accordance with prevailing market standards, and are in full force and effect and all premiums due and payable thereon have been paid, and no Seller or any Acquired Company is in breach or default of any of the insurance policies or has taken any action or failed to take any action which, with notice or the lapse of time, would constitute such a breach or default or permit termination or modification of any of the insurance policies. There is and have been in the Lookback Period, no pending claim exceeding an amount of $500,000 under any insurance policy for the Acquired Companies.

Section 2.16 Litigation. Except as set forth on Section 2.16 of the Disclosure Schedule, (a) there are no material Proceedings pending or, to Sellers' Knowledge, threatened, against any Acquired Company or against a Seller in connection with the operation of the Business, at law or in equity, or before or by any Governmental Body, and (b) neither Seller in connection with the operation of the Business nor any Acquired Company is subject to any outstanding Order of any Governmental Body

Section 2.17 Product Liability. During the Lookback Period, no bona fide claims (a) have been asserted or, (b) to Sellers' Knowledge, threatened, against (in each case (a) and (b)) (i) any Acquired Company or (ii) any Seller for (x) Liabilities for death or serious bodily injury to any Person primarily resulting from any actual or alleged defect in any Transferring Product or (y) any material Liability assessed with respect to any failure to warn in accordance with applicable Law arising out of any Transferring Product.

Section 2.18 Employees.

(a) Section 2.18(a) of the Disclosure Schedule sets forth a true, correct and complete list as of the date specified in such Schedule of all of the employees of the Acquired Companies and those employees of a Seller that are primarily engaged in the operation of the Business (collectively, the "**Business Employees**"), indicating each such employee's (i) assigned ID, (ii) legal employer, (iii) job title, (iv) whether classified as exempt or non-exempt for wage and hour purposes, (v) date of hire, (vi) annual base salary, whether paid on a salary, hourly or commission basis, (vii) annual bonus or commission potential or other cash incentive opportunity for which employee is eligible, (viii) principal work location (including city, state, and country), (ix) full-time or part-time status (or leave status, as applicable), (x) work visa/permit status if applicable; (xi) with respect to the Business Employees of Berna, overtime (*Überstunden und Überzeit*) and holiday credits; (xii) severance terms and (xiii) long-term incentives (if any). Sellers have separately provided Buyer with the names of each Business Employee corresponding with the assigned ID in the foregoing Schedule.

(b) Section 2.18(b) of the Disclosure Schedule sets forth a true, correct and complete list as of the date specified in such Schedule of all independent contractors, consultants, and advisors of the Acquired Companies and of a Seller that are primarily engaged in the operation of the Business, including such individual's (i) name, (ii)

engagement date and estimated termination date, (iii) compensation per year, and (iv) principal work location (including city, state, and country). Sellers have separately provided Buyer with the names and contracts of each independent contractor, consultant and advisor in the foregoing Schedule.

(c) Except as set forth on Section 2.18(c) of the Disclosure Schedule:

(i) neither Seller in connection with the operation of the Business and no Acquired Company is a party to or bound by any collective bargaining agreement, nor has any of them experienced any strike, work stoppages, picketings, lockouts, other organized work interruptions, or material labor dispute, claim of unfair labor practices, or other collective bargaining dispute during the Lookback Period;

(ii) there are no material disputes, whether written or, to Sellers' Knowledge oral, pending between any Seller or any Acquired Company and any of the Business Employees;

(iii) to Sellers' Knowledge, there are no current union representation questions involving any of the Business Employees;

(iv) during the Lookback Period, there has not been any unfair labor practice charge or complaint pending, unresolved or, to Sellers' Knowledge, threatened or reasonably anticipated by or on behalf of any employees of any Seller before any court, Arbitrator, the National Labor Relations Board or other Governmental Body relating to the employment practices of Sellers in connection with the operation of the Business or of the Acquired Companies;

(v) during the Lookback Period, each Seller in connection with the operation of the Business and each Acquired Company has been in compliance in all material respects with (a) all applicable Laws respecting labor, employment, staff leasing, fair employment practices, work place safety and health, terms and conditions of employment, wages and hours, the proper classification and treatment of employees as exempt or non-exempt, immigration status, employee safety and health, and the proper classification, registration with competent (social security) authorities, and treatment of any employee, director, manager, member of any other corporate body, independent contractor or any other person or entity who has in the past or currently provides services to such Acquired Company and (b) the requirements of the Immigration Reform Control Act of 1986; and in each case, with respect to Business Employees, no Seller (i) is liable for any arrears of wages, severance pay or any Taxes or any penalty for failure to comply with any of the foregoing and (ii) is liable for any payment to any trust or other fund governed by or maintained by or on behalf of any Governmental Body, with respect to unemployment compensation benefits, social security or other benefits or obligations for employees (in each case, other than routine payments to be made in the Ordinary Course of Business and consistent with past practice). To Sellers' Knowledge, all employees are authorized and have appropriate documentation to work in the jurisdiction in which they are working.

(vi) the services provided by each Business Employee located in the U.S. are terminable at the will of each Seller;

(vii) during the Lookback Period and in connection with the operation of the Business, no Seller is, nor has it even been, a party to a settlement agreement related to allegations of employment discrimination or sexual harassment or misconduct by an officer, director or employee of Sellers;

(viii) each Seller is in compliance with the WARN Act, or any similar applicable law. During the Lookback Period and in connection with the operation of the Business, (A) no Seller has effectuated a "plant closing" (as defined in the WARN Act) affecting any site of employment or one or more facilities or operating units within any site of employment or facility of its business, (B) there has not occurred a "mass layoff" (as defined in the WARN Act) affecting any site of employment or facility of any Seller and (C) no Seller has been affected by any transaction or engaged in layoffs or employment terminations sufficient in number to trigger application of any similar applicable law. No Seller has caused any of the Business Employees to suffer an "employment loss" (as defined in the WARN Act or any similar applicable law) during the 90-day period prior to the date of this Agreement;

(ix) to Sellers' Knowledge, no employee of any Seller primarily engaged in the operation of the Business is in violation of any term of any employment agreement, noncompetition agreement/clause, or any restrictive covenant to a former employer relating to the right of any such employee to be employed by any Seller because of the nature of the business conducted or planned to be conducted by any Seller or to the use of trade secrets or proprietary information of others; and

(x) neither the execution and delivery of this Agreement, nor the consummation of the transactions contemplated hereby, either alone or in combination with any other event, would reasonably be expected to: (i) entitle any Business Employee or other service provider of any Seller primarily engaged in the operation of the Business (or any dependent or beneficiary thereof) to any payment of compensation; (ii) increase the amount of compensation or benefits due to any such person; (iii) accelerate the vesting, funding or time of payment of any compensation, equity award, phantom equity award or other benefit; (iv) require a contribution by any Seller to any employee Plan; or (v) result in any payments or benefits that, individually or in combination with any other payment, could constitute the payment of any "excess parachute payment" within the meaning of Section 280G of the Code or in the imposition of an excise tax under Section 4999 of the Code.

This Section 2.18 contains the sole representations and warranties of Sellers with respect to labor and employee matters.

Section 2.19 Employee Benefits.

(a) Section 2.19(a) of the Disclosure Schedule contains a list of each material benefit, retirement, employment, consulting, compensation, incentive, bonus, stock option, restricted stock, stock appreciation right, phantom equity, change in control, severance, vacation, paid time off, welfare and fringe-benefit agreement, plan, policy and program in effect and covering one or more Business Employees, former employees of the Business, current or former directors of the Business or the beneficiaries or dependents of any such Persons, and is maintained, sponsored,

contributed to, or required to be contributed to by Seller or by an Acquired Company, or under which Seller or an Acquired Company has any current or contingent material liability or obligation to contribute, including contributions to plans sponsored by Swiss occupational benefit legislation, other than any plan or insurances sponsored and maintained by a Governmental Body that provides for social security, workers' compensation and similar benefits under applicable Law (*e.g.*, any mandatory Swiss social security insurances such as old-age and survivors' insurance *Alters und Hinterlassenenversicherung* (*AHV*)), unemployment insurance (*Arbeitslosenversicherung* (ALV)), disability insurance (*Invalidenversicherung* (IV)) and mandatory accidence insurance (*Unfallversicherung* (UV)) (as listed on Section 2.19(a) of the Disclosure Schedule, each, a "**Benefit Plan**").

(b) Except as set forth in Section 2.19(b) of the Disclosure Schedule, to Sellers' Knowledge, each Benefit Plan and related trust complies with all applicable Laws (including ERISA, the Code and applicable local Laws). Each Benefit Plan that is intended to be qualified under Section 401(a) of the Code (a "**Qualified Benefit Plan**") has received a favorable determination letter from the Internal Revenue Service, or with respect to a prototype plan, can rely on an opinion letter from the Internal Revenue Service to the prototype plan sponsor, to the effect that such Qualified Benefit Plan is so qualified and that the plan and the trust related thereto are exempt from federal income Taxes under Sections 401(a) and 501(a), respectively, of the Code. With respect to any Benefit Plan, to Sellers' Knowledge, no event has occurred or is reasonably expected to occur that has resulted in or would subject a Seller or Acquired Company to a Tax under Section 4971, 4980B, 4980D or 4980H of the Code or the Purchased Assets to a lien under Section 430(k) of the Code.

(c) Except as set forth in Section 2.19(c) of the Disclosure Schedule, (i) other than routine claims for benefits, there are no pending or, to Sellers' Knowledge, threatened Proceedings by or on behalf of any participant in any Seller Benefit Plan, or otherwise involving a Seller Benefit Plan or the assets of any Seller Benefit Plan, (ii) there has been no material non-exempt "prohibited transaction" within the meaning of Section 4975 of the Code or Sections 406 or 407 of ERISA, and (iii) to Sellers Knowledge, no breach of fiduciary duty (as determined under ERISA) with respect to any Seller Benefit Plan.

(d) Except as set forth in Section 2.19(d) of the Disclosure Schedule, no Benefit Plan: (i) is subject to the minimum funding standards of Section 302 of ERISA or Section 412 of the Code; or (ii) is a "multiemployer plan" (as defined in Section 3(37) of ERISA). Neither Seller nor any Acquired Company has: (A) withdrawn from any pension plan under circumstances resulting (or expected to result) in liability; or (B) engaged in any transaction which would give rise to a liability under Section 4069 or Section 4212(c) of ERISA.

(e) Except as set forth in Section 2.19(e) of the Disclosure Schedule and other than as required under Section 4980B of the Code or other applicable Law, no Benefit Plan provides benefits or coverage in the nature of health, life or disability insurance following retirement or other termination of employment (other than death benefits when termination occurs upon death).

(f) Except as set forth in Section 2.19(f) of the Disclosure Schedule, no Benefit Plan exists that could: (i) result in the payment to any Business Employee, director or consultant of the Business of any money or other property; or (ii) accelerate the vesting of or provide any additional rights or benefits (including

funding of compensation or benefits through a trust or otherwise) to any Business Employee, director or consultant of the Business, in each case, as a result of the execution of this Agreement.

(g) Except as set forth in Section 2.18(g) of the Disclosure Schedule, each Seller Benefit Plan or other plan, program, policy or arrangement that constitutes a "nonqualified deferred compensation plan" within the meaning of Treasury Regulation Section 1.409A-1(a)(i) has been operated in material compliance and has been documented in material compliance with Section 409A of the Code, as amended, and the Treasury regulations and related guidance promulgated thereunder.

(h) With respect to any Benefit Plan maintained in Switzerland, all material social security payments and material pension fund contributions relating to any period prior to the Closing Date to be paid by the Acquired Companies with respect to the employees of the Acquired Companies and to such Swiss Benefit Plans in favor of the employees of the Acquired Companies have been paid when due according to the applicable Laws and the respective regulations of the applicable Benefit Plans or have been adequately provided for in the Financial Statements. The Benefit Plans maintained in Switzerland have no claim against the Acquired Companies or Sellers, other than for the current ordinary contributions.

(i) According to applicable local accounting and actuarial rules, (i) the commitments of the Swiss pension schemes to which the Acquired Companies are affiliated are fully funded, and (ii) the Swiss pension schemes regarding the current and former employees of the Acquired Companies are covered by more than 100% pursuant to the latest actuarial reports.

This Section 2.19 contains the sole representations and warranties of Sellers with respect to employee benefit matters.

Section 2.20 Environmental. Except as set forth in Section 2.20 of the Disclosure Schedule or in any Environmental Document obtained by or made available to, or prepared or created by, Buyer (including Environmental Documents obtained from or made available by or on behalf of Sellers): (a) as of the date of this Agreement, Sellers with respect to the operation of the Business, the Purchased Assets, and the Acquired Companies are in compliance with all applicable Environmental Laws, (b) during the Lookback Period, neither Seller with respect to the Business nor any Acquired Company has received any written notice from any Governmental Body regarding any actual or alleged violation of Environmental Laws or indicating that any Acquired Company has been identified by the United States Environmental Protection Agency as a potentially responsible party under the Comprehensive Environmental Response, Compensation and Liability Act of 1980, as amended, with respect to a site listed on the National Priorities List, 40 C.F.R. Part 300 Appendix B, and (c) to Sellers' Knowledge, during the Lookback Period, neither Seller with respect to the operation of the Business nor any Acquired Company has disposed of or released any Hazardous Substance at any Owned Real Property in quantities or concentrations that require investigation or remediation by such Seller or Acquired Company under applicable Environmental Laws. Berna has and at all times during the Lookback Period has had, all material environmental authorizations, permits, licenses, and certificates granted or issued by a Governmental Body or private institution necessary to conduct its business. This Section 2.20 contains the sole representations and warranties of Sellers with respect to environmental matters, not including environmental matters related to Owned Real Property.

Section 2.21 Brokers. Except as set forth on Section 2.21 of the Disclosure Schedule, neither Seller nor any Acquired Company has employed any financial advisor, broker or finder, or incurred any liability for any broker's fees, commissions or finder's fees, in connection with any of the transactions contemplated hereby.

Section 2.22 Illegal Payments; FCPA. Neither Seller with respect to the Business, any Acquired Company, nor any of their respective Affiliates in respect of the Business has, directly or indirectly, violated any provision of the U.S. Foreign Corrupt Practices Act of 1977, as amended, or any such other applicable anti-bribery Laws, including by: (a) the use of any company funds for unlawful contributions, gifts, entertainment or other expenses relating to political activity; (b) making any unlawful payment to foreign or domestic government officials or employees or to foreign or domestic political parties or campaigns from company funds; or (c) making or receiving any unlawful bribe, rebate, payoff, influence payment, kickback or other similar unlawful payment. This Section 2.22 contains the sole representations and warranties of Sellers with respect to anti-bribery Laws.

Section 2.23 Trade Control Laws. Since October 4, 2018, each Acquired Company and any officer, director, employee or, to Sellers' Knowledge, agent of any Acquired Company: (a) has been in compliance with all applicable laws and regulations pertaining to export controls and trade and economic sanctions (collectively, "**Trade Control Laws**"); and (b) has obtained any licenses, registrations, and other authorizations required under applicable Trade Control Laws for the conduct of its business. Since October 4, 2018, no Acquired Company or any officer, director, employee or, to Sellers' Knowledge, any agents acting on behalf of any of the foregoing (i) is or has been a Person with whom transactions are prohibited or restricted under any applicable Trade Control Laws or (ii) has violated or made a disclosure (voluntary or otherwise) to any Governmental Body regarding any Trade Control Laws. Since October 4, 2018, no Acquired Company has engaged in any transaction or otherwise dealt, directly or knowingly indirectly, with a country or territory that is the subject of comprehensive sanctions (Cuba, Iran, North Korea, Syria, or the Crimea, Donetsk, or Luhansk regions of Ukraine) in violation of applicable Trade Control Laws. To Sellers' Knowledge, no Proceeding, governmental investigation, or inquiry related to Trade Control Laws is or has been pending or threatened in writing against any Acquired Company or any officer or director of any Acquired Company (in his or her capacity as an officer or director of any Acquired Company) by or before (or, in the case of a threatened matter, that would come before) any Governmental Body.

Section 2.24 CHIK Development Plans. As of the date of this Agreement, Sellers and their respective Affiliates are not Developing and have no intention to Develop any vaccine for the prevention or prophylaxis of chikungunya (with the exception of the CHIK VLP). During the Lookback Period through the date of this Agreement Sellers and their respective Affiliates have not been engaged in the Development of any vaccine for the prevention or prophylaxis of chikungunya (with the exception of the CHIK VLP).

Section 2.25 No Other Representations or Warranties. Except for the representations and warranties of Sellers expressly set forth in this ARTICLE 2 (in each case, as modified by the Disclosure Schedule) (the "**Express Representations**"), neither Seller, any of their Affiliates nor any of their respective directors, officers, employees, managers, shareholders, members, agents, representatives or any other Person makes or will be deemed to have made any representation or warranty whatsoever to Buyer or its Affiliates, oral or written, express or implied, it being understood, acknowledged and agreed that any and all such other representations or warranties (including any representation or warranty with respect to the subject matter of this Agreement, the Purchased Assets, the Acquired

Companies, the Business, the Shares, or the execution or delivery hereof or the consummation of the transactions contemplated hereby) are being and shall be deemed to have been disclaimed by Sellers and all of their Affiliates. Except as expressly set forth in the Express Representations, neither Seller, any of their Affiliates nor any of their respective directors, officers, employees, managers, shareholders, members, agents, representatives or any other Person shall be liable in respect of the accuracy or completeness of any information provided to Buyer or any of its Affiliates, directors, officers, employees, partners, members, equity holders, investors or Representatives. EXCEPT AS OTHERWISE EXPRESSLY REPRESENTED OR WARRANTED IN THIS AGREEMENT, BUYER IS AND WILL ACQUIRE THE BUSINESS, THE PURCHASED ASSETS, THE ACQUIRED COMPANIES AND THE SHARES WITHOUT ANY REPRESENTATION OR WARRANTY AS TO MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE, IN AN "AS IS" CONDITION AND ON A "WHERE IS" BASIS.

ARTICLE 3
REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer makes the following representations and warranties to Sellers.

Section 3.1 Organization. Buyer is duly organized, validly existing and in good standing under the Laws of its jurisdiction of organization. Buyer has all requisite power and authority to carry on its businesses.

Section 3.2 Authorization. Buyer has the requisite power and authority to execute and deliver the Transaction Documents to which it is (or will be) a party and to perform its obligations thereunder. The execution and delivery by Buyer of each of the Transaction Documents to which it is (or will be) a party, and the performance by Buyer of its obligations thereunder, have been duly authorized by all requisite organizational action. This Agreement has been duly and validly executed and delivered by Buyer and, assuming the due authority, execution and delivery by each Seller, constitutes, and each of the other Transaction Documents to which Buyer is a party will be duly and validly executed and delivered by Buyer (as applicable), and when so executed and delivered by the other parties thereto (assuming the due authority, execution and delivery by such other parties) shall constitute, a valid and legally binding obligation of Buyer (to the extent a party thereto), enforceable other than in a de minimis respect against Buyer (to the extent a party thereto) in accordance with their respective terms, except as enforceability may be limited by bankruptcy, insolvency, fraudulent conveyance, reorganization, or moratorium Laws, other similar Laws affecting creditors' rights and general principles of equity affecting the availability of specific performance and other equitable remedies (regardless of whether enforcement is sought in a proceeding at law or in equity).

Section 3.3 Noncontravention. Neither the execution and delivery by Buyer of this Agreement and the other Transaction Documents to which Buyer is (or will be) a party nor the performance by Buyer of its obligations hereunder or thereunder will, with or without the sending of notice or passage of time (or both): (a) violate any Law or Order to which Buyer is subject or any provision of their respective Organizational Documents; or (b) conflict with, result in a breach of, constitute a default under, result in the acceleration of, create in any party the right to accelerate, terminate, modify or cancel or require any notice under any Contract or other arrangement to which Buyer is a party or by which Buyer is bound or to which any of their assets are subject, except with respect to clause (b), for violations, breaches, defaults, terminations, cancellations or accelerations that would not reasonably be expected to prevent Buyer from consummating the transactions contemplated

by this Agreement. Except for any notices, filings, authorizations, consents or approvals of any Governmental Body required to be obtained prior to the Closing, including under applicable antitrust or foreign investment laws, Buyer is not required by Law, Contract or otherwise to give any notice to, make any filing with or obtain any authorization, consent or approval of any Governmental Body in order to consummate the transactions contemplated by this Agreement.

Section 3.4 Proceedings. There are no Proceedings pending or, to the knowledge of Buyer, threatened against Buyer that: (a) question the validity of this Agreement or any action taken or to be taken by Buyer in connection with, or which seek to enjoin or obtain monetary damages in respect of, this Agreement; or (b) that, individually or in the aggregate, would reasonably be expected to prevent or delay in any material respect the ability of Buyer to perform its obligations under and consummate the transactions contemplated by this Agreement.

Section 3.5 Financing.

(a) Subject to Section 3.5(b), Buyer has immediately available funds sufficient to consummate the transactions contemplated by this Agreement, including the payment of the Estimated Closing Cash Payment and all fees and expenses payable by Buyer in connection with the transactions contemplated by this Agreement.

(b) Buyer has delivered to Sellers true, correct and complete copy of the Debt Commitment Letter. As of the of this Agreement, the Debt Commitment Letter is a legal, valid and binding obligation of Buyer and, to the knowledge of Buyer, each other party thereto, and enforceable against Buyer and, to the knowledge of Buyer, each other party thereto in accordance with its terms, except to the extent enforceability may be limited by applicable bankruptcy, insolvency, fraudulent conveyance, reorganization, moratorium or other laws affecting the enforcement of creditors' rights generally and principles of equity. There are no conditions precedent related to the funding of the full amounts of the Debt Financing and, to the knowledge of Buyer, no other contingencies or rights that would permit the parties thereto to reduce the total amount of the Debt Financing contemplated by the Debt Commitment Letter to be funded on the Closing Date, other than as set forth in the Debt Commitment Letter. Except for the Debt Commitment Letter, as of the date of this Agreement, there are no other contracts, agreements, "side letters" or other arrangements to which Buyer or any of its Affiliates is a party relating to the Debt Commitment Letter or the Debt Financing that could reasonably be expected to adversely affect the conditionality, enforceability, availability, termination or aggregate principal amount of the Debt Financing on the Closing Date.

Section 3.6 Solvency. Assuming: (a) that the representations and warranties of the Sellers set forth in ARTICLE 2 are true and correct in all material respects as of Closing, and (b) the satisfaction of the conditions to Buyer's obligation to consummate the transactions contemplated by this Agreement set forth in Section 5.1 and Section 5.3 below immediately following Closing, after giving effect to the transactions contemplated by this Agreement, Buyer the Acquired Companies will be Solvent. No transfer of property is being made by (or at the direction of) Buyer, and no obligation is being incurred by (or at the direction of) Buyer, in connection with the transactions contemplated by this Agreement with the intent to hinder, delay or defraud either present or future creditors of any Acquired Company.

Section 3.7 Investment Intent. Buyer is acquiring the Shares for investment and not with a view toward or for sale in connection with any distribution thereof, or with any present intention of distributing or selling the Shares. Buyer understands and agrees that the Shares may not be sold, transferred, offered for sale, pledged, hypothecated or otherwise disposed of without registration under the Securities Act of 1933, as amended, except pursuant to an exemption from such registration available thereunder, and without compliance with state, local and foreign securities Laws, in each case, to the extent applicable.

Section 3.8 Broker's Fees. Neither Buyer nor anyone acting on its behalf has incurred or will incur any liability or obligation to pay fees or commissions to any broker, finder or agent with respect to the transactions contemplated by this Agreement or other Transaction Documents for which any Seller (or, if Closing does not occur, any Seller or any Acquired Company) will be liable.

Section 3.9 No Other Representations or Warranties. Buyer has not made, and it will not be deemed to have made, any representation or warranty in connection with this Agreement or the transactions contemplated hereby other than as expressly made by it in this ARTICLE 3 or any other Transaction Document to which it is party. Buyer acknowledges that, except as expressly for the Express Representations, neither Seller nor any other Person is making and will not be deemed to have made, and Buyer is not relying on, any representation or warranty of any kind whatsoever, express or implied, at Law or in equity, in connection with or with respect to the transactions contemplated herein (it being understood, for the avoidance of all doubt, all representations and warranties (other than the Express Representations) have been expressly and specifically disclaimed by (and Buyer has accepted the disclaimer by) Sellers).

Section 3.10 R&W Insurance. Prior to the date of this Agreement, Buyer has provided Sellers with true, complete and correct copies of: (a) the R&W Insurance Binder entered into by Buyer concurrently with the execution and delivery of this Agreement; (b) the no claims declaration delivered by Buyer to the insurer under the R&W Policy; and (c) the R&W Policy that will be issued to Buyer at Closing.

ARTICLE 4
COVENANTS AND AGREEMENTS

Section 4.1 Conduct of Business Pending Closing. During the period from the date of this Agreement through the earlier of the Closing or the termination of this Agreement in accordance with ARTICLE 6:

(a) except as set forth on Section 4.1(a) of the Disclosure Schedule, for actions expressly contemplated, permitted or required by this Agreement as required by applicable Law or as otherwise consented to in writing by Buyer (which consent shall not be unreasonably withheld, delayed or conditioned; *provided* that the consent of Buyer shall be deemed to have been given if Buyer does not object within five Business Days from the date on which a request for such consent is provided to Buyer), Sellers shall, and Sellers shall cause the Acquired Companies to, use commercially reasonable efforts to conduct the Business in the Ordinary Course of Business;

(b) Without limiting the generality of Section 4.1(a), from and after the date hereof until the earlier of the Closing Date and the termination of this Agreement, except as set forth on Section 4.1(b) of the Disclosure Schedule, the Sellers shall not in connection with their operation of the Business, and shall cause

each Acquired Company not to, except as consented to in writing by Buyer (which consent may not unreasonably be withheld, conditioned or delayed):

(i) implement or adopt any material change in the accounting principles, practices or methods of any Acquired Company, other than as may be required by Law or applicable accounting requirements;

(ii) (A) terminate, enter into, establish, adopt, or materially amend any Benefit Plan, or materially increase the compensation or benefits of any Acquired Company employee, other than, in any such case, (1) as would not result in liability to any Acquired Company following the Closing, (2) to the extent paid in cash prior to Closing or to the extent included in Closing Transaction Expenses, (3) in the Ordinary Course of Business of the applicable Acquired Company, *provided* such increases do not exceed, in the aggregate [***]% of the aggregate cost of all annual employee compensation of the Acquired Companies, (4) in the case of new hires or promotions, subject to clause (C) of this paragraph (ii), or (5) as required by Law or by any Benefit Plan in effect as of the date of Agreement; (B) terminate the employment or services of any officer or employee of an Acquired Company whose annual base compensation is greater than $[***], other than for cause; or (C) hire any officer, employee or independent contractor or consultant (who is a natural person or a single-member entity) whose annual compensation from the Acquired Companies exceeds $[***], other than to fill a new or existing vacancy in the Ordinary Course of Business;

(iii) compromise or settle any Proceeding (x) resulting in an obligation of any Acquired Company to pay more than $[***] in respect of compromising or settling such Proceeding or (y) resulting in any non-cash obligation on any Acquired Company that would remain in effect following the Closing;

(iv) (A) acquire (by merger or stock or asset purchase or otherwise) any corporation, partnership, other business organization or any material business, assets or division thereof, (B) acquire, lease or license any right or other asset from any other Person for an aggregate value in excess of $[***], (C) sell or otherwise dispose of, lease or requested with respect to the omitted portions license (or grant any other right with respect to), any material right or asset to any other Person (other than sales of inventory in the Ordinary Course of Business), or (D) encumber or subject to any right or asset to any Encumbrance other than a Permitted Encumbrance or any Encumbrance that will be released prior to the Closing;

(v) amend its Organizational Documents;

(i) with respect to any Acquired Company, (A) enter into any written Contract with respect to any Indebtedness with a third party in excess of $[***], (B) make any loans or advances (other than employee loans or advances in the Ordinary Course of Business) or capital contributions to, or investments in, any Person or (C) enter into any "keep well" or other Contract to maintain any financial statement condition of another Person;

(ii) (A) other than in connection with or in furtherance of the Reorganization, declare set aside or pay any non-cash dividend on, or make

any other non-cash distribution (whether in stock or property) in respect of, any Equity Interests of any of the Acquired Companies, (B) split, combine or reclassify any Equity Interests of the Acquired Companies, or issue or authorize the issuance of any securities in respect of, in lieu of or in substitution for Equity Interests of any of the Acquired Companies, (C) purchase, redeem or otherwise acquire any Equity Interests of any of the Acquired Companies, or any option, warrant, call or right relating to such Equity Interests, or (D) issue, grant, deliver or sell, or pledge or otherwise encumber or dispose of, any Equity Interests of any of the Acquired Companies, or any securities convertible into, or exchangeable for, or any options, warrants, calls or rights to acquire or receive, any such Equity Interests or any equity appreciation rights, phantom equity awards or other rights that are linked in any way to the price or value of Equity Interests of any of the Acquired Companies;

(iii) make, revoke or change any election in respect of Taxes, adopt or change any accounting method in respect of Taxes, file any federal, state or foreign income Tax Return or any other material Tax Return (other than Tax Returns due on or prior to the Closing Date), file any amendment to a federal, state or foreign income Tax Return or any other material Tax Return, enter into any Tax sharing or similar agreement or closing agreement, settle or compromise any audit, proceeding, claim or assessment in respect of Taxes, or consent to any extension or waiver of the limitation period applicable to any claim or assessment in respect of Taxes, enter into intercompany transactions giving rise to deferred gain or loss of any kind, in each case, to the extent such action could reasonably be expected to increase a Tax liability for Buyer in a taxable period ending after the Closing Date (other than a Straddle Period);

(iv) (A) enter into any lease or sublease of real property, (B) enter into any Contract, if existing on the date hereof, that would constitute a Material Contract (except for Contracts with customers, suppliers, or distributors in the Ordinary Course of Business), or (C) waive, release or assign any material rights or claims under, fail to take a required action under, fail to exercise a right of renewal under, or modify, amend or terminate any Material Contract (in each case, except in the Ordinary Course of Business);

(v) (A) commence, participate or agree to commence or participate in any plan or arrangement for the complete or partial dissolution, liquidation, merger, consolidation, restructuring, recapitalization or other reorganization of any of the Acquired Companies (other than as contemplated by this Agreement, including the Reorganization), including any bankruptcy, winding up, examinership, insolvency or similar proceeding in respect of any Acquired Company or (B) create any Subsidiary of any of the Acquired Companies (other than the other Acquired Companies);

(vi) (A) except as required in the diligent prosecution of the Intellectual Property Rights comprised within the Intellectual Property Assets, Owned Business Intellectual Property, and Licensed Business Intellectual Property grant, extend, amend, abandon, waive or modify any material rights in or to such Intellectual Property Rights, (B) fail to take reasonable steps to prosecute the Intellectual Property Rights comprised within the Intellectual Property Assets, Owned Business Intellectual Property, and Licensed Business

Intellectual Property in a manner consistent with past practice in the Ordinary Course of Business, or (C) fail to take reasonable steps to maintain the confidentiality and security of their trade secrets or any other Intellectual Property Rights comprised within the Intellectual Property Rights comprised within the Intellectual Property Assets, Owned Business Intellectual Property, and Licensed Business Intellectual Property that are confidential or intended to be kept confidential in a manner consistent with past practice in the Ordinary Course of Business;

(vii) materially change or modify the development, manufacture or commercialization practices and procedures with respect to any of the Transferring Products, except in a manner consistent with past practice in the Ordinary Course of Business or as otherwise required by Law;

(viii) (A) commence or terminate any clinical trial of any Transferring Product, (B) materially modify the operation of any clinical trial of any Transferring Product, or (C) materially modify the protocol of any clinical trial of any Transferring Product (or allow any of the foregoing (A)-(C) to occur), otherwise than as required by applicable Law or for safety considerations;

(ix) engage in any correspondence, communication or consultation with any Governmental Body or any counterparty to a contract manufacturer agreement or similar arrangement without providing Buyer with prior written notice and the opportunity to consult with the Seller or the applicable Acquired Company with respect to such correspondence, communication or consultation, in each case, other than in the Ordinary Course of Business;

(x) engage in any practice that could reasonably be considered Channel Stuffing of any Product;

(xi) (A) delay payments or (B) extend or amend payment terms to suppliers and contractors in relation to the Accrued Clinical Trial Costs; or

(xii) authorize or enter into any Contract with respect to any of the foregoing.

(c) Sellers shall, during the period from the date hereof through the Closing or earlier termination of this Agreement, Sellers shall and shall cause their Affiliates to regularly consult with the Buyer as reasonably requested by Buyer with regard to the operation and management of any ongoing clinical trials of the Transferring Products and shall reasonably and in good faith consider all of the Buyer's comments with regard thereto.

(d) Except for the transactions contemplated hereby, during the period from the date hereof through the Closing or the earlier termination of this Agreement, Sellers shall not and shall cause its Affiliates and Representatives not to (and shall not authorize any of them to), directly or indirectly, take any action to facilitate, solicit, encourage, initiate, engage or otherwise cooperate in any way (including by assisting a Person other than Buyer or its Affiliates or Representatives) in discussions or negotiations with any Person (other than Buyer and its Affiliates and Representatives) concerning any sale of the Equity Interests (including the Shares) of, or license, sale or other disposition of any material portion of the assets or Intellectual Property Rights of or related to (including by merger or consolidation), the Purchased Assets or Acquired Companies (other than the sale of inventory in the ordinary course of

business) (each such acquisition transaction, an "**Alternative Transaction**"). Sellers shall, and shall direct their respective Affiliates and Representatives to, (a) immediately cease and cause to be terminated all existing discussions or negotiations with any Person (other than Buyer and its Affiliates and Representatives) conducted heretofore with respect to any Alternative Transaction and (b) cease to provide any confidential information (including by immediately terminating all access to the data room and all information contained therein) to such Person(s) and each of their Representatives.

(e) Sellers shall, and shall instruct their respective Representatives to, consult with Buyer and take Buyer's feedback into consideration before any communication with any Governmental Body regarding the Purchased Assets or any Acquired Company.

Section 4.2 Access to Information.

(a) Subject to applicable restrictions contained in any confidentiality agreement to which either Acquired Company or any Seller is subject, during the period from the date of this Agreement through the earlier of the Closing or the termination of this Agreement in accordance with ARTICLE 6, upon reasonable prior written notice and subject to applicable Laws relating to the exchange of information and confidentiality obligations applicable to information furnished to Sellers or the Acquired Companies by third parties that may be in the possession of Sellers or the Acquired Companies from time to time, the Sellers shall afford to the Representatives of Buyer, during normal business hours and in a manner as to not interfere with the normal operation of the Business or the Acquired Companies, reasonable access to the properties, books, Contracts and records of the Business, and Sellers shall make available to Buyer such information concerning the Business, the Purchased Assets and the Business Employees as Buyer may reasonably request to effect the consummation of the transactions contemplated by this Agreement; provided, however, that (a) neither Buyer nor its Representatives shall perform, or request or cause to be performed, intrusive soil or groundwater sampling at any Owned Real Property, (b) such right shall not apply to information subject to an attorney-client privilege, (c) such inspection shall be conducted in accordance with all applicable antitrust or competition Laws, shall only be upon reasonable notice and shall be at Buyer's sole cost and expense, and (d) Sellers need not supply any information which, in the good faith judgment of Sellers is under a contractual or legal obligation not to supply; provided, however, that at Buyer's reasonable request and at the expense of Buyer, Sellers shall use their commercially reasonable efforts to seek the consent of any party whose consent is required to remove any contractual restriction on disclosure to Buyer. Sellers shall have the right to have one or more of their Representatives present at all times during any such reviews, examinations or discussions. Prior to the Closing, without the prior written consent of Sellers, Buyer shall not, and Buyer shall cause its Representatives not to, contact any customers, suppliers, lenders, business counterparties or competitors of the Business regarding the Purchased Assets or the operations or prospects of the Business regarding this Agreement or the transactions contemplated hereby. Prior to the Closing, (i) any information provided to or obtained by Buyer or its Representatives pursuant to this Section 4.2 or any other provision of this Agreement will be subject to the confidentiality agreement between Buyer and Emergent BioSolutions, Inc., a Delaware corporation, dated as of September 19, 2022 (the "**Confidentiality Agreement**"), the provisions of which are incorporated herein by reference, and shall

be held by Buyer and its Representatives in accordance with and be subject to the terms and conditions of the Confidentiality Agreement, and (ii) Buyer agrees to be bound by and comply with the provisions set forth in the Confidentiality Agreement as if such provisions were set forth herein, which provisions are hereby incorporated herein by reference.

(b) The Parties acknowledge that any of the Buyer, the Acquired Companies and each of their Representatives may wish to inspect and/or copy following Closing, and/or retain copies taken prior to Closing of, the Product Registrations, Regulatory Documents and any other books and records relating to the Transferring Product and the Business delivered to the Buyer under this Agreement or retained by the Sellers (the "**Records**") for the purpose of:

(i) dealing with any report, return, statement, audit, filing or other requirement required under any applicable Law;

(ii) dealing with its Tax affairs;

(iii) dealing with any Proceeding (including with or by any Governmental Body); or

(iv) dealing with any other matter arising out of this Agreement or the transactions contemplated hereby.

Sellers shall, upon being given reasonable notice by the other Party, make the Records available to any of the Buyer, the Acquired Companies and each of their Representatives for inspection and copying, in each case for and (in the opinion of the relevant Party) to the extent necessary or expedient for one or more of the purposes as set out in Section 4.2(b) above; *provided*, *however*, that (1) any such access does not unreasonably interfere with the normal business operations of the Acquired Companies, and (2) Sellers shall not be required to make any Records available to Buyer or any of the Acquired Companies if in the reasonable opinion of Sellers' counsel such disclosure would reasonably be expected to jeopardize an attorney-client or other privilege.

(c) Buyer will, and will cause the Acquired Companies to, retain until the seventh anniversary of the Closing Date any books and records of the Acquired Companies or any other books and records included among the Purchased Assets relating to pre-Closing periods to the extent in the possession of Buyer or an Acquired Company as of Closing. After Closing, upon reasonable notice, Buyer will, and will cause the Acquired Companies to, provide Sellers and their Representatives with reasonable access (including the right to make copies at their expense) during normal business hours to such pre-Closing Books and Records of the Acquired Companies as is reasonably necessary in connection with any post-Closing matters; *provided that* any such access does not unreasonably interfere with the normal business operations of the Acquired Companies.

Section 4.3 Support of Transactions; Efforts to Obtain Approvals and Consents; Regulatory Approvals.

(a) **Support of Transactions**. Subject to the terms and conditions of this Agreement, Sellers and Buyer shall, and shall cause their respective Affiliates to, use their respective reasonable best efforts to take, or cause to be taken, all actions necessary, proper or advisable to comply promptly with all Laws that may be imposed on such Parties or their Affiliates with respect to the transactions contemplated hereby

(including filings under applicable antitrust and foreign investment laws) and, subject to the conditions set forth in ARTICLE 5, to consummate the transactions contemplated hereby as promptly as practicable, to obtain (and to cooperate with the other Parties to obtain) as promptly as practicable any consent, authorization, or approval of, any other third party that is required to be obtained by them or any of their respective Affiliates in connection with the transactions contemplated hereby, and to comply with the terms and conditions of any such consent, authorization, or approval.

(b) **Costs and Expenses**. Buyer expressly acknowledges and agrees that it shall be solely liable and responsible for satisfying, discharging and paying any and all filing and regulatory fees, costs, expenses or other payments arising from or relating to any filings, consents or other actions contemplated or required to be taken in connection with the consummation of the transactions contemplated by this Agreement, whether under or pursuant to this Section 4.3(b) or any other provision of this Agreement, including, among others, any and all of the following: (i) all fees payable to the Governmental Body in connection with the antitrust, competition or trade regulation matters contemplated by this Agreement, (ii) advisor fees and expenses (including, if applicable, any fees and expenses owed to any expert, including economist, retained in connection with the transactions contemplated by this Agreement or any approvals, consents or authorizations required in connection therewith, including those retained in connection with obtaining, or in providing any information required or requested by any Governmental Body in connection with any filings or requests to obtain, any authorizations or consents described above or otherwise required from any antitrust or, competition or trade regulatory approvals, authorizations or consents relating to the transactions contemplated hereby) and (iii) all other fees, costs, expenses or other amounts required to be satisfied, discharged or paid to obtain (or in connection with any filings, consents or other actions taken in furtherance of, or to facilitate, the obtaining of) any consents, authorizations or approvals required or otherwise pursued in connection with the consummation of the transactions contemplated by this Agreement, including those made with or required to be obtained from any third Person or pursuant to any Assigned Contract or any Contract to which an Acquired Company is a party or which any of their respective assets or properties are bound or subject (the fees, costs, expenses and other payments listed in (i), (ii) and (iii) above being referred to herein as, "**Filing and Consent Expenses**"); *provided*, *however*, that for the avoidance of doubt, the Filing and Consent Expenses shall not include the fees and expenses of Sellers' counsel and its other advisors (other than economists retained in connection with any approval consents or authorizations required in connection with the transactions contemplated in this Agreement). To the extent that any Filing and Consent Expenses or other amounts for which Buyer is responsible hereunder are incurred or paid by Sellers, Buyer shall be obligated to pay or reimburse the applicable Seller(s) for the amount thereof paid or incurred by any of them promptly upon receipt of notice thereof setting forth the amount so paid or incurred by any of them. In addition to and without limiting the foregoing, Buyer agrees to indemnify, defend and hold harmless the Sellers and their Affiliates from and against any and all claims, causes of action, losses, Liabilities or other Adverse Consequences suffered or incurred by any of them that arise from or out of or otherwise relate to any Filing and Consent Expenses or any actions, omissions or other events relating thereto, including any actions or omissions taken or omitted by any Seller or any Acquired Company in furtherance of its obligations relating to obtaining any consents, authorizations or approvals or any

filings or notices contemplated or required in connection with the transactions contemplated by this Agreement, including those contained in this Section 4.3, or any other actions or omissions at the request or direction of Buyer. For the avoidance of all doubt, Buyer acknowledges and agrees that the payment and reimbursement obligations relating to the Filing and Consent Expenses, as well as the corresponding indemnification obligations of Buyer described above that have not been satisfied, discharged, paid or reimbursed in full prior to the Closing or any termination of this Agreement shall survive and continue in full force and effect following the Closing or, if applicable, the termination of this Agreement, in each case, until satisfied, discharged, paid or reimbursed in full by Buyer.

(c) **Regulatory Filings.**

(i) *General*. Sellers and Buyer shall, and shall cause their respective Affiliates to, use their reasonable best efforts to (A) as diligently and promptly as practicable, obtain from any Governmental Body any consent, approval, authorization, declaration, waiver, license, franchise, permit, certificate or order required to be obtained or made by Buyer, Seller, or any of the Acquired Companies, and to avoid any action or Proceeding by any Governmental Body, in each case in connection with the authorization, execution and delivery of this Agreement and the consummation of the transactions contemplated herein and (B) as promptly as reasonably practicable make all necessary filings and responses, and thereafter make any other required submissions, with respect to this Agreement required under any applicable Law, including those listed in Section 2.4(a) of the Disclosure Schedule, the Hart-Scott-Rodino Act Antitrust Improvements Act of 11976, as amended (the "**HSR Act**"), and the rules and regulations promulgated thereunder, and any other antitrust Laws. Sellers and Buyer shall, and shall cause their respective Affiliates to, cooperate with each other in connection with obtaining all such consents, approvals, authorizations, declarations, waivers, licenses, franchises, permits or orders and the making of all such filings, including providing copies of any material non-proprietary documents to the non-filing Party and its advisors prior to filing and, if requested, to accept all reasonable additions, deletions or changes suggested in connection therewith. Sellers and Buyer shall, and shall cause their respective Affiliates to, promptly furnish to each other all information required for any application or other filing to be made by the other in connection with the transactions contemplated by this Agreement. Notwithstanding the foregoing, or anything to the contrary in this Agreement, Buyer shall be entitled to direct and shall have principal responsibility for determining strategy for obtaining approvals or expiration or termination of any waiting period under the HSR Act and other antitrust Laws, provided Buyer shall consult with Sellers in good faith regarding such strategy. Buyer will not, and will not permit its Affiliates to, consent or agree to any voluntary delay of the consummation of the transactions contemplated by this Agreement without the prior written consent of Sellers, which consent shall not be unreasonably withheld. For the avoidance of this doubt, this Section 4.3(c)(i) shall not apply to the Product Registrations included in the Purchased Assets which shall be governed by the provisions of the Transition Services Agreement.

(ii) *Antitrust Laws*. Sellers and Buyer agree to make, and to cause their Affiliates to make, any necessary filings under the HSR Act and under

the Laws relevant to the filings listed in Section 2.4(a) of the Disclosure Schedule as promptly as reasonably practicable after execution of this Agreement. Buyer shall, and shall cause its Affiliates to, respond at the earliest practicable date with any request under the HSR Act or any other antitrust Laws to provide information, documents or other materials requested by any Governmental Body. Buyer shall, and shall cause its Affiliates to take all actions necessary to, (A) resolve as soon as practicable objections, if any, asserted by any Governmental Body with respect to this Agreement or the transactions contemplated by this Agreement and (B) obtain promptly all consents, approvals, authorizations, declarations, releases, waivers, licenses, franchises, permits, certificates or Orders from any Governmental Body necessary in connection with the consummation of the transactions contemplated by this Agreement, including to secure the termination or expiration of the applicable waiting period and all requisite clearances and approvals under the HSR Act and any other antitrust Laws (collectively, the "**Antitrust Conditions**") as promptly as practicable and in any event on or prior to the End Date, without challenge by any Governmental Body, and otherwise resolve any objections, if any, asserted by any Governmental Body with respect to this Agreement or the transactions contemplated by this Agreement, including, but not limited to, by (x) seeking to prevent the initiation of, and defending any Proceeding challenging this Agreement or the consummation of the transactions contemplated hereby, (y) avoiding the entry of, or causing to be lifted or rescinded any injunction, judgment, order or ruling entered by any Governmental Body adversely affecting the ability of the Parties to consummate the transactions contemplated by this Agreement, and (z) divesting or holding separate any assets or voting securities, terminating or modifying any existing relationships or contractual rights, or entering into a consent decree order requiring the divestiture or holding separate of any assets or voting securities or the termination or modification of existing relationships and contractual rights. Further, each of Buyer and Sellers shall, and shall cause their Affiliates to, coordinate and cooperate with the other in connection with efforts to obtain all consents, approvals, authorizations, declarations, releases, waivers, licenses, franchises, permits, certificates or orders from any Governmental Body necessary in connection with the consummation of the transactions contemplated by this Agreement, including satisfying the Antitrust Conditions which shall include (1) cooperating in all respects with the other in connection with any investigation or other inquiry, (2) keeping the other promptly informed of any material communication from any Governmental Body, including the Federal Trade Commission or U.S. Department of Justice or similar foreign Governmental Body regarding any of the transactions contemplated hereby, (3) providing the other and its advisors with a reasonable opportunity to (I) review and comment upon any proposed communication with any Governmental Body and consider in good faith the views of the other in connection with any analysis, appearance, presentation, memorandum, brief, argument, opinion, proposal or other communication to be made or submitted in connection with any request, inquiry, investigation, action or legal proceeding of a Governmental Body, (II) consult with the other prior to any meeting or conference with any Governmental Body, (III) to the extent permitted by such Governmental Body, attend and participate in such meetings or conferences, and (IV) providing

such other information and assistance as the other may reasonably request in connection with the foregoing. The Parties shall provide each other with copies of all correspondence, filings or communications between them or any of their Representatives, on the one hand, and any Governmental Body or members of its staff, on the other hand, with respect to this Agreement in connection with any request, inquiry, investigation, action or legal proceeding by a Governmental Body; *provided*, such materials may be redacted (i) to remove references concerning the valuation of the Acquired Companies and the Business, (ii) as reasonably necessary to comply with contractual arrangements in existence as of the date of this Agreement, (iii) as reasonably necessary to preserve attorney-client or other privilege concerns, and (iv) to remove material that is unrelated to both the transactions and the substance of any investigation by a Governmental Body; *provided*, *further*, material may be designated as "outside counsel only," in which case such materials will only be given to the other Party's outside counsel unless express written permission is obtained in advanced from the source of the materials or its legal counsel. Buyer shall be responsible for the payment of all filing fees under the HSR Act and any other antitrust Laws.

(iii) *Other Actions*. Except as specifically required by this Agreement, Sellers and Buyer shall not, and shall cause their respective Affiliates not to, knowingly take any action, or knowingly refrain from taking any action, the effect of which would be to materially delay or materially impede the ability of the Parties to consummate the transactions contemplated by this Agreement. Without limiting the generality of the forgoing, Buyer shall not, and shall not permit any of its Affiliates to, acquire or agree to acquire (by merging or consolidating with, or by purchasing a substantial portion of the assets of or equity in, or by any other manner), any Person or portion thereof, or otherwise acquire or agree to acquire any assets, if the entering into of a definitive agreement relating to, or the consummation of, such acquisition, merger or consolidation could reasonably be expected to (A) impose any delay in the obtaining of, or increase the risk of not obtaining, any authorizations, consents, orders, declarations or approvals of any Governmental Body necessary to consummate the transactions contemplated by this Agreement or the expiration or termination of any applicable waiting period, (B) increase the risk of any Governmental Body entering an order prohibiting or delaying the consummation of the transactions contemplated by this Agreement, or (C) delay the consummation of the transactions contemplated by this Agreement.

(iv) *Obligations Cumulative*. The Parties' obligations in this Section 4.3 are cumulative, and a Party's obligations in any specific clause of this Section 4.3 shall not be interpreted to limit in any way the Parties' obligations in any other clause.

Section 4.4 D&O Matters.

(a) From and after the Closing Effective Time, Buyer shall, and shall cause the Acquired Companies to, honor all of the Acquired Companies' obligations as provided in their respective Organizational Documents to indemnify each current or former director or officer (or persons holding similar positions) of any Acquired Company currently indemnified by any Acquired Company (collectively, "**D&O**

Indemnified Persons") for acts or omissions by such D&O Indemnified Persons in their capacity as a director or officer of any Acquired Company occurring prior to the Closing to the extent that such obligations of any of the Acquired Companies exist on the date of this Agreement from the Closing until the expiration of the applicable statute of limitations with respect to any claims against such D&O Indemnified Persons arising out of such acts or omissions.

(b) For a period of not less than [***] from the Closing Date, to the fullest extent permitted, and subject to any limitations imposed, by applicable Law and the Organizational Documents of the applicable Acquired Company in effect as of the date of this Agreement, Buyer shall, and shall cause each of the Acquired Companies to, indemnify, defend and hold harmless their respective D&O Indemnified Persons against all damages, losses, charges, liabilities, claims, demands, actions, suits, judgments, settlements, costs and expenses (including reasonable attorneys' fees and disbursements) as incurred (payable monthly upon written request which request shall include reasonable evidence of the Covered Losses set forth therein), to the extent arising from, relating to, or otherwise in respect of, any actual or threatened Proceeding in respect of actions or omissions by such D&O Indemnified Person occurring at or prior to the Closing in connection with such D&O Indemnified Person's duties as an officer, director or employee (or Persons holding similar positions) of the Acquired Company, including in respect of this Agreement and the transactions contemplated by this Agreement ("**Covered Losses**").

(c) Effective upon the Closing, the Acquired Companies, and each of their respective Affiliates, Representatives, successors and assigns (which, for the avoidance of doubt, shall not include Sellers) (collectively, the "**Releasing Parties**"), covenants that none of such Persons shall institute any Proceeding against any of the current or former officers or directors (or Persons holding similar positions) of any Acquired Company, in their capacities as such, with respect to any losses or other liabilities, actions or causes of action, judgments, claims and demands of any nature or description (consequential, compensatory, punitive or otherwise) arising from or relating to actions occurring prior to the Closing, whether or not such Person would be entitled to indemnification by the Acquired Companies under this Section 4.4 and, effective as of the Closing, each Releasing Party, to the fullest extent permitted by applicable Law, hereby releases and forever discharges and the directors and officers (and Persons holding similar positions), managers, employees, equityholders, Affiliates, agents, Representatives of the Purchased Companies, and their respective successors and assigns (collectively, the "**D&O Released Parties**") from any and all Covered Losses, claims for costs and attorney's fees, losses, charges, or liabilities of any nature whatsoever ("**Claims**") in law, in equity, by contract, tort or otherwise, or by reason of, relating to or arising from any fact, and which the Releasing Parties now has, has ever had or may hereafter have against the respective D&O Released Parties arising prior to the Closing whether or not relating to claims pending at, or asserted after, the Closing, and whether arising under any federal, state or local civil or human rights law, or under any other local, state, or federal law, regulation or ordinance, or under any public policy, contract or tort, or under common law; or any claim for breach of contract, tort, infliction of emotional distress, defamation, or any claim for costs, fees, or other expenses, including attorneys' fees incurred in these matters; *provided*, *however*, that nothing contained herein shall operate to release any Covered Losses or Claims on account of, arising out of, relating to or under Buyer's rights under this Agreement. For that purpose, immediately after the Closing, Buyer shall

hold an extraordinary quotaholders' meeting of Berna to grant unconditional discharge to the D&O Indemnified Persons for any acts or omissions prior to the Closing Date.

(d) Notwithstanding anything contained in this Agreement to the contrary, this Section 4.4 shall survive the consummation of the Closing indefinitely and shall be binding, jointly and severally, on all successors and assigns of Buyer, the Acquired Companies and the other Releasing Parties. In the event that Buyer or any Acquired Company or any of their respective successors or assigns consolidates with or merges into any other Person and shall not be the continuing or surviving company or entity of such consolidation or merger or transfers or conveys all or substantially all of its properties and assets to any Person, then, and in each such case, proper provision shall be made so that the successors and assigns of Buyer or any Acquired Company, as the case may be, shall succeed to the obligations set forth in this Section 4.4. The obligations of Buyer and the Acquired Companies under this Section 4.4 shall not be terminated or modified in such a manner as to adversely affect any Person to whom this Section 4.4 applies without the consent of the affected Person. In furtherance of the foregoing, it is expressly and specifically acknowledged, understood and agreed that the provisions of this Section 4.4 are (i) intended to be for the benefit of, and shall be enforceable by, each Person released or entitled to indemnification, or other benefit hereunder, and (ii) in addition to, and not in substitution for, any other right to indemnification or contribution that any such Person may have by Contract or otherwise.

Section 4.5 Employee and Employee Benefit Matters.

(a) **Transferred Employees**. Buyer shall offer employment to those of the Business Employees listed on Section 2.18(a) of the Disclosure Schedule who are identified as being employed by ETHI and who remain actively employed by ETHI immediately prior to the Closing, to commence immediately after Closing; *provided*, *however*, that any Business Employees listed on Section 2.18(a) of the Disclosure Schedule who are on a leave of absence immediately prior to Closing will be transferred to Buyer immediately after their leave of absence period ends and they return to work, and will have the benefit of, and be subject to all the terms and conditions set forth in this Section 4.5 as of the date their employment commences with the Buyer; *provided*, *further*, *however*, that if any such Business Employee on disability leave returns to work, but still continues to be provided with disability benefits under a fully insured disability plan that would terminate upon his or her transfer to Buyer, such Business Employee will continue to be retained by Seller until such time that such Business Employee's transfer to Buyer will not result in the loss of disability benefits provided through the Seller's fully insured disability plan for the disability leave of absence event that occurred prior to Closing. All such offers of employment will provide (i) for a period beginning on Closing and through [***]. ETHI shall assist Buyer and its Affiliates in their efforts to hire all such employees, and ETHI and its Affiliates shall not attempt to retain any such employees or encourage them to accept employment with another Person. Those Business Employees of ETHI that accept employment with Buyer, and become employees of Buyer are referred to herein as "**Transferred Employees**."

(b) **Acquired Company Employees**. From the Closing Date, Buyer shall not, and shall cause the Acquired Companies (other than Berna) not to, terminate or amend (to the detriment of the employees) any of the existing employment contracts

with the Acquired Companies' (other than Berna's) respective employees *provided*, *further*, *however*, that any provision in such employment contracts providing for benefits under a defined benefit plan, or specified severance benefits, or equity or equity-like incentive compensation shall not be enforceable unless required by Law or otherwise under this Section 4.5.

(c) **Amendment of International Employee Stock Purchase Plan**. As soon as reasonably possible following the date of this Agreement and in any event at or prior to the Closing Date, Sellers shall take any and all actions required (i) to validly amend the International Employee Stock Purchase Plan (a Sub-Plan of the Emergent BioSolutions Inc. 2012 Employee Stock Purchase Plan) (the "**IESP Plan**") to terminate each of the Acquired Companies' participation in the IESP Plan, and (ii) to settle any remaining obligations thereunder owed to any of the employees of the Acquired Companies in full.

(d) **Post-Closing Obligations**. From and after the Closing Date, Buyer will, and will cause the Acquired Companies to grant the Transferred Employees and the Acquired Companies' respective employees (the "**Continuing Employees**") [***] or to otherwise replace any Benefit Plans of the applicable Acquired Company in effect as of the Closing Date (the "**New Plans**"). Buyer will: (i) cause to be waived all pre-existing condition exclusions and actively-at-work requirements and similar limitations, eligibility waiting periods and evidence of insurability requirements under any New Plan that is a group health plan to the extent waived or satisfied by a Transferred Employee or Continuing Employee under the corresponding Benefit Plan as of the Closing Date; and (ii) use commercially reasonable efforts to cause any covered expenses incurred on or before the Closing Date by any Transferred Employee or Continuing Employee (or covered dependent thereof) to be taken into account for purposes of satisfying applicable deductible, coinsurance and maximum out-of-pocket provisions under any New Plan in the plan year in which the Closing Date occurs. Nothing contained herein, express or implied, is intended to confer upon any Transferred Employee or Continuing Employee any right to continued employment for any period. The Parties hereby agree that no provision of this Section 4.5 is intended to, and that no such provision does, confer upon any Person other than the Parties any right to or remedies hereunder, including the right to enforce any obligations of any Party contained herein. Nothing contained in this Section 4.5 shall (i) constitute or be deemed to constitute the establishment of or an amendment to or termination of any Benefit Plan or other compensation or benefit plan, policy, program, Contract or arrangement, (ii) obligate Buyer or any of its Affiliates or Subsidiaries (including the Acquired Companies) to retain the employment or service of (or provide any term or condition of employment or service to) any particular Transferring Employee or Continuing Employee or other Person or (iii) prevent Buyer or any of its Affiliates or Subsidiaries (including the Acquired Companies) from amending, modifying or terminating any Seller Plan that Buyer assumes, Acquired Company Benefit Plan, Buyer Benefit Plan or New Plan or other benefit or compensation plan, policy, program, Contract or arrangement, to the extent such amendment, modification, or termination is permitted by the terms of the applicable plan, policy, program, Contract, or arrangement

(e) **Cash Retention Incentive Awards**. Without limiting the Parties' respective rights and obligations set forth in this Section 4.5, if, and to the extent, Buyer assumes Sellers' obligations under any cash retention incentive award promised in writing by Sellers to a Transferred Employee prior to the Closing Date

that, by the terms of such award, will vest and become payable after the Closing Date, (i) subject to the terms of the Transferred Employee's cash retention incentive award, Buyer shall pay such vested cash retention incentive award to the Transferred Employee, and (ii) Sellers shall reimburse Buyer a prorated portion of the cash retention incentive award, to be calculated by multiplying the cash retention incentive award by the ratio of the number of days starting with the date of the cash retention incentive award to the Transferred Employee and ending on the date prior to the Closing Date to the number of days starting with the date of the award of the cash retention incentive award to the Transferred Employee and ending on the vesting date.

(f) **[***]**

Section 4.6 Certain Tax Matters.

(a) **Tax Returns and Payment of Taxes**.

(i) *Seller Returns and Tax Liabilities*. Sellers shall prepare or cause to be prepared, all income Tax Returns relating to Pre-Closing Tax Periods of the Acquired Companies that are required to be filed (taking into account timely extensions) after the Closing Date for which a consolidated, unitary or combined income Tax Return of Seller or one of its Affiliates will include the operations of the Acquired Companies (such Tax Returns, the "**Seller Consolidated Income Tax Returns**"). Sellers shall timely pay or cause to be paid the income Taxes shown as due on such Seller Consolidated Income Tax Returns, *provided*, in no case shall Sellers be liable for any Taxes of the Acquired Companies attributable to actions or transactions of the Acquired Companies not in the Ordinary Course of Business occurring after Closing on the Closing Date, other than actions or transactions entered into by the Acquired Companies prior to Closing or made pursuant to this Agreement, and *provided further* that no such payment shall be required by Sellers to the extent the Tax was taken into account in the Closing Tax Liability Amount or Closing Net Working Capital, or otherwise taken into account in determining the amounts payable to Sellers hereunder.

(ii) *Buyer Tax Return and Tax Liabilities*. Buyer shall prepare and timely file, or cause to be prepared and timely filed, all Tax Returns relating to Pre-Closing Tax Periods of the Acquired Companies that are required to be filed (taking into account timely extensions) after the Closing Date, other than the Seller Consolidated Income Tax Returns. Buyer shall timely pay or cause to be paid all Taxes shown as due with such Tax Returns, subject to Buyer's rights to indemnification under this Agreement.

(iii) *Tax Accounting Practices*. Any Tax Return relating to an Acquired Company filed after the date hereof for any Pre-Closing Tax Period shall, unless otherwise required by applicable Law or approved by the Parties, be prepared according to the requirements of this Agreement and in conformance with the Tax accounting practices established in the Tax Holiday Decree, and, to the extent not inconsistent with this Agreement or the Tax Holiday Decree, the past Tax accounting practices used by the Acquired Companies with respect to the Tax Returns in question. To the extent any items are not covered by this Agreement past practices, or to the extent the requirements under this Agreement or such past practices are not permissible

under applicable Law, the items may be reported in accordance with any reasonable Tax accounting practices selected by the party responsible for preparing the Tax Return.

(iv) *Review of Tax Returns*. If reasonably requested by Sellers, Buyer shall make available to the Sellers and their Representatives for review and comment any Tax Returns and related workpapers prepared by Buyer relating to any Acquired Company for any Pre-Closing Tax Period. Buyer shall use its reasonable efforts to make such Tax Return and workpapers available for review as required under this paragraph sufficiently in advance of the due date for filing such Tax Returns to provide Sellers with a meaningful opportunity to analyze and comment on such Tax Returns and have such Tax Returns modified before filing. Buyer and Sellers shall attempt in good faith to resolve any issues arising out of the review of such Tax Returns.

(v) *Amended Returns, Etc*. Neither Buyer nor any of its post-Closing Affiliates (including the Acquired Companies) will (A) file any amended return, carryback claim, or other adjustment request relating to any Acquired Company for any Pre-Closing Tax Period (including any Straddle Period) or (B) be permitted to initiate (or cause to be initiated) any voluntary disclosure or similar process with respect to the Taxes of the Acquired Companies or relating to the Acquired Assets for any Pre-Closing Tax Refunds unless such action is required by applicable Law, or the Person proposing to file the return, claim, or adjustment request has obtained the prior written consent of Sellers.

(b) **Tax Refunds and Credits**. Following Closing, any cash Tax refunds that are received by an Acquired Company, Buyer, or their respective post-Closing Affiliates, and any amounts applied as a credit against Taxes of the Acquired Companies, Buyer and/or their respective post-Closing Affiliates, that represent an overpayment of Taxes of the Acquired Companies for a Pre-Closing Tax Period will be for the account of Sellers, except to the extent that the amount was taken into account as an increase to the Final Closing Cash Payment. Buyer or its Affiliates (as applicable) will, or will cause the Acquired Companies to, pay over to Sellers any amount payable to Sellers under this Section 4.6(b) within 15 days after receipt of such refund or application of such credit against Tax, net of: (i) any reasonable out-of-pocket costs associated in obtaining such refunds or applications; and (ii) any Tax resulting from such refund or required to be withheld on such payment.

(c) **Cooperation**.

(i) The Parties will, and will cause their respective Affiliates to, provide each other with such assistance as may reasonably be requested in connection with the preparation and filing of any Tax Return of the Acquired Companies and any Proceedings relating to Taxes of the Acquired Companies. Such assistance will include promptly forwarding copies of notices and other communications received from or sent to any Governmental Body relating to Taxes of any Acquired Company for which the Other Party may be responsible under applicable Law or this Agreement, and making employees available on a mutually convenient basis to provide additional information or explanation of material provided hereunder and will include providing copies of relevant Tax Returns and supporting material. The Parties and their respective Affiliates will retain for the full period of any applicable statute of

limitations (or such longer period as provided by applicable Law or any applicable record retention agreements entered into with any Governmental Body), and upon reasonable request will provide the Other Party with, any records or information which may be relevant to such Tax Returns or Proceedings.

(ii) Any information or documents provided pursuant to this Section 4.6(c) shall be kept confidential by the Person receiving the information or documents, except as may otherwise be necessary in connection with the filing of Tax Returns or in connection with any Proceedings relating to Taxes or as otherwise required by applicable Law. Nothing in this Section 4.6(c) shall require Sellers or Buyer to provide access to or disclosure of any information or documents (i) relating to any Party's assets or activities other than the assets and activities of any Acquired Company, or (ii) to the extent such access and disclosure would (A) violate any applicable Law; (B) violate the terms of any agreement to which the disclosing Party or any Affiliate is bound, or (C) impair any attorney-client, work-product, or similar privilege of the disclosing Party.

(d) **Transfer Taxes**. All transfer, documentary, sales, use, stamp, valued-added, real estate transfer, registration and other similar Taxes, and all conveyance fees, recording charges and other similar fees and charges (including any additions, penalties and interest related thereto, together with any interest in respect of such additions or penalties , but excluding, for the avoidance of doubt, any Taxes resulting from the Reorganization) incurred in connection with consummation or as a result of the transactions contemplated by this Agreement (collectively, "**Transfer Taxes**") shall be paid 50% by Sellers and 50% by Buyer. The Person required to file any necessary Tax Return or other documentation with respect to any Transfer Tax will, at its own expense, file such Tax Return or other documentation.

(e) **Withholding**. Buyer will be entitled to withhold from any consideration payable to such Seller pursuant to this Agreement such amounts as may be required to be withheld therefrom under applicable Law. To the extent such amounts are so withheld and are paid over for such Seller's account according to applicable Law, such amounts will be treated for all purposes of this Agreement as having been paid to such Seller as provided in this Agreement. If Buyer's obligation to withhold with respect to a payment to any Seller can be reduced or eliminated through the provision of a certification or applicable form, Buyer shall provide such Seller with a reasonable opportunity to provide such certification or form.

(f) **Section 338 and Other Elections**. Buyer agrees to make no election under Section 338 or Section 336 of the Code with respect to the sale and purchase of Shares pursuant to this Agreement, and to make no other Tax election with respect to any Pre-Closing Tax Period or the transactions contemplated by this Agreement unless (A) Sellers have given written consent or (B) Sellers have requested that Buyer make any such election described in this Section 4.6(f).

(g) **Termination of Tax Sharing Agreements**. All Tax indemnity, sharing, or allocation agreements or other Contracts (the primary purpose of which is to indemnify, share, or allocate Taxes) between any Acquired Company and any other Person (other than an Acquired Company) shall be terminated as of the Closing Date, and there will be no rights or Liability of Buyer or any Acquired Company under any such agreement following the Closing Date.

(h) **Tax Contests**. Following the Closing, and subject to the immediately following sentence, Buyer shall control all audits or administrative or judicial proceedings relating to Taxes of any Acquired Company. In the case of an audit or administrative or judicial proceeding that relates to Pre–Closing Tax Periods or for which Buyer may otherwise seek indemnification from Sellers under this Agreement (a "**Seller Tax Contest**"), Sellers shall have the right, at their own expense, control such Seller Tax Contest; provided that (i) Buyer may, at its own expense, participate with Seller in the conduct of such Seller Tax Contest and provided further that Sellers may not settle Pre-Closing Contest where the settlement reasonably could be expected to affect Buyer in a period other than a Pre-Closing Tax Period without Buyer's written consent, which consent shall not be unreasonably withheld, conditioned or delayed.

(i) **Straddle Periods**. To the extent it is necessary for purposes of this Agreement to determine the allocation of Taxes in any Straddle Period, the portion of any such Taxes attributable to the portion of the period ending on the Closing Date shall be (a) in the case of Taxes that are either (i) based upon or related to income or receipts, or (ii) imposed in connection with any sale of property, deemed equal to the amount that would be payable if the Tax period of the applicable Seller or Acquired Company ended with (and included) the Closing Date; provided that, exemptions, allowances or deductions that are calculated on an annual basis shall be allocated between the period ending on and including the Closing Date and the period beginning after the Closing Date in proportion to the number of days in each period, and (b) in the case of Taxes that are imposed on a periodic basis with respect to the assets or capital of any Person, deemed to be the amount of such Taxes for the entire Straddle Period multiplied by a fraction, the numerator of which is the number of calendar days in the portion of the period ending on and including the Closing Date and the denominator of which is the number of calendar days in the entire period.

(j) **Tax Holiday Decree**. From and after Closing, Buyer shall cause Berna to comply with the terms and conditions of Section 4 and 5 of the Tax Holiday Decree.

Section 4.7 Swiss Property Approvals.

(a) Sellers and Buyer shall, and shall cause their respective Affiliates to, use their reasonable best efforts to as diligently and promptly as practicable and in any event at or prior to the Closing Date, obtain the clearances, waivers, approvals or consents set forth on Section 4.7 of the Disclosure Schedule (collectively, the "**Swiss Property Approvals**"). To the extent any relevant authorities are prepared to grant clearances, waivers, approvals or consents only subject to requirements or conditions (*unter Auflagen oder Bedingungen*), Buyer undertakes, subject to such requirements or conditions neither imposing any limitation regarding the acquisition of the Owned Real Property or any material part thereof nor any material limitation on Buyer's ability to operate the Acquired Companies and the Business in a manner consistent with the Acquired Companies' past practices, to offer and to accept the imposition of any reasonable requirements or conditions and promptly take, or cause to be promptly taken, at its cost and expense any reasonable steps which are necessary for the timely fulfilment of such requirements and conditions (be it before or after Closing). In addition, Sellers and Buyer shall, and shall cause their respective Affiliates to, cooperate with, and promptly provide any required information or documents to, the Other Party in such Other Party's efforts to obtain the Swiss Property Approvals.

Buyer shall use its reasonable best efforts to seek from any applicable Governmental Body all waivers of appeal, early termination and similar consents and waivers as soon as reasonably practicable. All fees required to be paid in connection with the Swiss Property Approvals shall be borne by Buyer.

(b) Each of Sellers and Buyer shall, upon request by the other and subject to appropriate confidentiality restrictions, promptly furnish the other with all documentation concerning the Acquired Companies, Sellers or Buyer and such other matters as may be necessary or reasonably advisable in connection with the Swiss Property Approvals; *provided* that any such documentation furnished by the Parties to one another may be redacted or provided on an "outside counsel only" basis to the extent necessary, either to comply with applicable Law or to protect the confidentiality of information that if furnished would not materially facilitate the other party's understanding of the status of matters relating to consummation of the transactions contemplated hereby.

(c) Subject to applicable Law, each Party shall keep the other apprised of the status of matters relating to the Swiss Property Approvals, including (i) promptly notifying the other of any facts, circumstances or other reason that would prevent the receipt of any Swiss Property Approvals for the timely consummation of transactions contemplated by this Agreement and the other Transaction Documents, and (ii) promptly furnishing the other with copies of notices or other communications given, made or received by a Party to or from any third party or any Governmental Body with respect to the Swiss Property Approvals; *provided* that any such notices furnished by the Parties to one another may be redacted or provided on an "outside counsel only" basis to the extent necessary, either to comply with applicable Law or to protect the confidentiality of information that if furnished would not materially facilitate the Other Party's understanding of the status of matters relating to consummation of the transactions contemplated hereby. No Party shall permit any of its officers or any other Representatives or agents to participate in any meeting with any Governmental Body with respect to any filings, investigation or other inquiry relating to the transactions contemplated hereby unless it consults with the other party in advance and, to the extent permitted by such Governmental Body, gives the other parties the opportunity to attend and participate thereat.

(d) Seller shall, or shall cause the Acquired Companies to, use their respective commercially reasonable efforts to obtain a waiver of the right of first refusal with respect to those parts of plots [***] of the Land Register of Koniz that are located in the agricultural zone and leased from Berna (the "**RoFR Waiver**") as promptly as practicable after the date hereof.

Section 4.8 Further Assurances. Each of Sellers and Buyer shall, at any time or from time to time after the Closing, and at the reasonable request and expense of the other:

(a) execute (in accordance with any jurisdictional requirements) and deliver to the other all such instruments and documents or further assurances as the other may reasonably request in order to:

(i) vest in Buyer all of Sellers' right, title and interest in and to the Purchased Assets as contemplated hereby;

(ii) effectuate Buyer's assumption of the Assumed Liabilities; and

(iii) grant to each Party all rights contemplated herein to be granted to such Party under this Agreement and any other Transaction Document; and

(b) provide such other reasonable cooperation as may be necessary in order to give effect to the transactions contemplated by the Transaction Documents, which may include reasonable access, within ordinary working hours, to documents and information in the relevant Party's possession relating to the Business, Purchased Assets and Assumed Liabilities (in the case of the Buyer) and relating to the Excluded Assets and Excluded Liabilities (in the case of the Sellers), and preserving and retaining such documents and information for at least the length of time contemplated by its standard record retention policies;

provided, *however*, that neither Party shall be required to make any information available to the other Party if in the reasonable opinion of disclosing Party's counsel such disclosure would reasonably be expected to jeopardize an attorney-client or other privilege; and *provided*, *further*, *however*, that after the Closing, apart from such further assurances, neither Sellers nor Buyer shall have any other obligations except as specifically set forth and described herein or in the other Transaction Documents.

(c) Without limiting the foregoing, and without prejudice to any other provision of this Agreement, the cooperation contemplated by this Section 4.8 shall include cooperation (at the request and expense of the Party seeking such cooperation) in the defence or prosecution of any Proceeding by or before any Governmental Body relating to or arising out of the Transferring Products and involving Buyer, Sellers or their respective Affiliates, other than any such Proceeding between any of Buyer, Sellers and their respective Affiliates arising out of the transactions contemplated hereby or by the other Transaction Documents.

(d) The Parties acknowledge that it may be necessary to enter into separate local agreements where a local agreement is necessary in order to make an effective, valid transfer of any Purchased Assets or Assumed Liabilities (as the case may be) or otherwise in order to comply with the laws of certain jurisdictions. In such event, each local agreement shall be agreed upon by the Parties and shall be subject to the provisions of this Agreement. In the event of any conflict between this Agreement and any local agreement, this Agreement shall prevail.

Section 4.9 Reorganization. Exhibit A hereto generally describes the reorganization steps Sellers plan to undertake to implement the Reorganization. At least ten (10) Business Days prior to implementing the Reorganization, Sellers shall prepare and deliver to Buyer draft documentation to implement the Reorganization. Within five (5) Business Days of receipt of the draft Reorganization documentation, Buyer shall review and provide Sellers with any comments on such documentation. Sellers shall consider in good faith Buyer's comments on the Reorganization documentation. At least three (3) Business Days prior to implementing the Reorganization, Sellers shall deliver final definitive documentation to implement the Reorganization. Seller shall cause the Reorganization to be completed in accordance with the final Reorganization documentation by no later than the third (3rd) Business Day prior to the Closing. Seller undertakes to inform Buyer of any relevant updates related to the Reorganization, and answer any reasonable Buyer questions or concerns related to the Reorganization, in each case at any time prior to completion of the Reorganization.

Section 4.10 Swiss Tax Ruling. Prior to the date of this Agreement, Seller has prepared and delivered to Buyer the draft Swiss Tax Ruling requests (including all exhibits,

annexes and endorsements thereto). Buyer shall provide any comments on such draft Swiss Tax Ruling requests and related documentation within two (2) Business Days after the date of this Agreement. Seller shall consider in good faith Buyer's comments on the draft Swiss Tax Ruling requests and related documentation. Within five (5) Business Days following Seller's receipt of Buyer's comments (if any), Seller shall provide to Buyer a copy of the final Swiss Tax Ruling requests and related documentation and proof of filing of any such documentation with the competent Swiss Tax authorities. Seller undertakes to inform Buyer of any relevant updates related to the Swiss Tax Ruling, and answer any reasonable Buyer questions or concerns related to the Swiss Tax Ruling, in each case at any time prior to the issuance of the tax ruling confirmation by the respective Swiss Tax authorities.

Section 4.11 Debt Financing. Buyer shall use its commercially reasonable efforts to (a) enter into the Debt Facilities, which shall reflect the terms of the Debt Commitment Letter, on or before the Closing Date, (b) negotiate and enter into definitive agreements with respect to the Debt Facilities on terms and conditions not materially less favorable to Buyer, taken as a whole (including with respect to the conditionality thereof), than the terms and conditions contained in the Debt Commitment Letter (as of the date of this Agreement), and (c) take all actions necessary to enable it to utilize the Debt Facilities on the Closing Date. If the Debt Financing contemplated by any of the Debt Commitment Letter becomes unavailable on the terms and conditions contemplated therein, in whole or in part, Buyer shall (i) promptly notify Sellers thereof and (ii) use, and cause its Affiliates to use, commercially reasonable efforts to, as promptly as practicable following the occurrence of such event, arrange for and obtain alternative financing on terms and conditions to funding and availability that are not (unless otherwise consented to in writing by the Buyer) materially less favorable, in the aggregate, to Buyer than those in the Debt Commitment Letter in respect of the Debt Financing which has become unavailable and, in any event, without adding new or additional conditions precedent or contingencies, or amending, modifying or expanding existing conditions, to receipt of the Debt Financing from those set forth in the Debt Commitment Letter as of the date of this Agreement. In no event shall the receipt by, or the availability of any funds or financing to, Buyer or any of its Affiliates or any other financing be a condition to Buyer's obligation to consummate the transactions contemplated by this Agreement.

Section 4.12 Wrong Pockets.

(a) *Assets*. For a period of up to [***] after the Closing Date, if either Seller or Buyer becomes aware that any of the Purchased Assets has not been transferred to Buyer or that any of the Excluded Assets has been transferred to Buyer, it shall promptly notify the other Party in writing and the Parties shall, as soon as reasonably practicable, ensure that such property is transferred, with any necessary prior third-party consent or approval, to (i) Buyer, in the case of any Purchased Asset which was not transferred to Buyer at the Closing; or (ii) Seller, in the case of any Excluded Asset which was transferred to Buyer.

(b) *Payments*. If, on or after the Closing Date, either Party shall receive any payments or other funds due to the other Party pursuant to the terms of this Agreement or any Transaction Document, then the Party receiving such funds shall, within [***] after receipt of such funds, forward such funds to the proper Party. The Parties acknowledge and agree there is no right of offset regarding such payments and a Party may not withhold funds received from Third Parties for the account of the other Party in the event there is a dispute regarding any other issue under this Agreement or any of the other Transaction Documents.

Section 4.13 Names. As soon as reasonably practicable after the Closing Date, Buyer shall, and shall cause the Acquired Companies to, cease using the trade name "Emergent", any derivations thereof and any names confusingly similar to any of the foregoing, except as otherwise provided in and pursuant to and subject to the terms and conditions of the Transition Services Agreement. As soon as reasonably practicable after the Closing Date, Buyer shall take, and shall cause the Acquired Companies to take, all necessary actions, including the filing of any documents with Governmental Bodies of the jurisdictions in which an Acquired Company is incorporated and in which an Acquired Company is otherwise qualified to do business, to change the company names of each such Acquired Company name to a name that does not include "Emergent", any derivations thereof, or any names confusingly similar to any of the foregoing.

ARTICLE 5
CLOSING CONDITIONS

Section 5.1 Conditions to Obligations of All Parties. The respective obligation of each Party hereto to effect the transactions contemplated by this Agreement is subject to the satisfaction or waiver on or prior to the Closing Date of the following conditions:

(a) **No Injunctions or Orders**. No temporary restraining order, preliminary or permanent injunction or other Order issued by any Governmental Body of competent jurisdiction or other legal restraint or prohibition, investigation or Proceedings enjoining or otherwise preventing or prohibiting the consummation of the transactions contemplated hereby must have been threatened or have been entered after the date hereof and is in effect.

(b) **Regulatory Approvals**. (i) Any waiting period (and any extension thereof) applicable to the consummation of the transactions under the HSR Act and any agreement with a Governmental Body not to consummate the transactions contemplated by this Agreement, if any, shall have expired or been terminated and (ii) all required consents, approvals, non-disapprovals and other authorizations of any Governmental Body (including for the avoidance of doubt with regard to the filings listed in Section 2.4(a) of the Disclosure Schedule) shall have been obtained.

(c) **Swiss Property Approvals**. The Swiss Property Approvals shall have been obtained from the competent Governmental Bodies, which shall have become final and binding (*rechtskräftig*).

(d) **Swiss Tax Ruling**. Berna must have received the Swiss Tax Ruling.

(e) **Termination**. This Agreement must not have been terminated in accordance with Section 6.1 below.

Section 5.2 Conditions to Obligations of Buyer. Buyer's obligations to consummate the transactions contemplated by this Agreement and to take the other actions required to be taken by Buyer at Closing are subject to the satisfaction, at or before Closing, of each of the following conditions (any of which may be waived by Buyer in its sole discretion, in whole or in part):

(a) **Sellers' Representations and Warranties**. (i) Each of the Express Representations of Sellers contained in ARTICLE 2 (disregarding all "material," "in all material respects" and "Material Adverse Effect" qualifiers), other than the Fundamental Representations and the representations and warranties set forth in Section 2.10 and Section 2.12, must be true and correct at and as of the Closing Date

as though made on and as of the Closing Date (except to the extent any such representations and warranties are expressly made as of a specific date, in which case such representations and warranties shall be true and correct only as of such date), other than to the extent that the failure of such representations and warranties to be so true and correct would not, individually or in the aggregate, constitute, or reasonably be expected to constitute, a Material Adverse Effect; (ii) each of the representations and warranties set forth in Section 2.10 and Section 2.12, must be true and correct at and as of the Closing Date as though made on and as of the Closing Date (except to the extent any such representations and warranties are expressly made as of a specific date, in which case such representations and warranties shall be true and correct only as of such date), other than to the extent that the failure of such representations and warranties to be so true and correct would materially and adversely affect Sellers and the Acquired Companies, taken as a whole; and (iii) each of the Fundamental Representations must be true and correct in all respects at and as of the Closing Date as though made on and as of the Closing Date (except to the extent any such Fundamental Representations are expressly made as of a specific date, in which case such representations and warranties shall be true and correct only as of such date).

(b) **Performance of Covenants and Obligations**. Sellers must have performed or complied with in all material respects the obligations required to be performed or complied with by them respectively under this Agreement at or prior to the Closing Date.

(c) **No Material Adverse Effect**. Subject to the exceptions disclosed in the Disclosure Schedule, since the date hereof, there must not have been any change, effect, event, state of facts, development or occurrence that has had a Material Adverse Effect.

(d) **Other Closing Deliverables**. Sellers must have delivered (or cause to be delivered) to Buyer:

(i) duly executed counterparts to the Transaction Documents (other than this Agreement) and such other documents and deliveries set forth in Section 1.6(c);

(ii) a certificate, dated the Closing Date and signed by a duly authorized officer of each Seller, that each of the conditions set forth in Section 5.2(a) and Section 5.2(b) have been satisfied (the "**Sellers Closing Certificate**"); and

(iii) certificates of the Secretary or an Assistant Secretary (or equivalent officer) of each Seller certifying (A) that attached thereto are true and complete copies of all resolutions adopted by the board of directors of such Seller authorizing the execution, delivery and performance of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby, and (B) the names and signatures of the officers of such Seller authorized to sign this Agreement, the Transaction Documents and the other documents to be delivered hereunder and thereunder (the "**Sellers Secretary's Certificates**").

Section 5.3 Conditions to Obligation of Sellers. The obligations of Sellers to consummate the transactions contemplated by this Agreement and to take the other actions

required to be taken by Sellers at Closing is subject to the satisfaction, at or before Closing, of each of the following conditions (any of which may be waived by Sellers, in whole or in part):

(a) **Buyer Representations and Warranties**. Each of the representations and warranties of Buyer set forth in ARTICLE 3 hereof must be true and correct at and as of the Closing Date as if made anew as of such date (except to the extent any such representation and warranty expressly relates to an earlier date (in which case as of such earlier date)), except for any failure of such representations and warranties to be true and correct that has not had a material adverse effect on the financial condition or operating results of Buyer taken as a whole or on the ability of Buyer to consummate the transactions contemplated hereby.

(b) **Performance of Covenants and Obligations**. Buyer and its Affiliates must have performed in all material respects the obligations required to be performed by them under this Agreement or any other Transaction Document at or prior to the Closing Date.

(c) **Closing Deliverables**. Buyer must have delivered (or cause to be delivered) to Sellers:

(i) duly executed counterparts to the Transaction Documents (other than this Agreement) and such other documents and deliveries set forth in Section 1.1(d);

(ii) a certificate, dated the Closing Date and signed by a duly authorized officer of Buyer, that each of the conditions set forth in Section 5.3(a) and Section 5.3(b) have been satisfied (the "**Buyer Closing Certificate**");

(iii) a certificate of the Secretary or an Assistant Secretary (or equivalent officer) of Buyer certifying (A) that attached thereto are true and complete copies of all resolutions adopted by the board of directors of Buyer authorizing the execution, delivery and performance of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby, and that all such resolutions are in full force and effect and are all the resolutions adopted in connection with the transactions contemplated hereby and thereby, and (B) the names and signatures of the officers of Buyer authorized to sign this Agreement, the Transaction Documents and the other documents to be delivered hereunder and thereunder (the "**Buyer Secretary's Certificates**"); and

(iv) a true, complete and correct copy of the R&W Policy issued to Buyer in respect of the transactions contemplated by this Agreement (including all exhibits, annexes and endorsements thereto), which must be in substantially the same form as the R&W Policy provided to Sellers prior to the date of this Agreement, together with documentation reasonably acceptable to the Sellers evidencing the satisfaction of all conditions precedent to the effectiveness of the R&W Policy.

(d) **Closing Payments by Buyer**. Buyer must have paid or caused to be paid the Estimated Closing Cash Payment and the other payments contemplated to be made by Buyer at Closing pursuant to Section 1.6 above or elsewhere herein.

ARTICLE 6
TERMINATION

Section 6.1 Termination Events. This Agreement may be terminated at any time prior to Closing:

(a) by mutual written agreement of Buyer and Sellers;

(b) by Buyer:

(i) upon a breach of any representation, warranty, covenant or obligation of Sellers set forth in this Agreement such that the conditions set forth in Section 5.2(a) or Section 5.2(b) above are incapable of being satisfied and, if such breach is curable, such breach is not cured prior to the expiration of 20 days following the receipt by Sellers of written notice thereof from Buyer;

(ii) if satisfaction of any of the conditions set forth in Section 5.2(a) or Section 5.2(b) above is or becomes impossible (other than through the failure of Buyer or its Affiliates to comply with any of their covenants or obligations under this Agreement); *provided* that Buyer will not be entitled to terminate this Agreement pursuant to this Section 6.1(b) at any time during which Buyer would be unable to satisfy the conditions set forth in Section 5.3(a) or Section 5.3(b) above; or

(iii) if the transactions contemplated hereby have not been consummated by the date that is six (6) months from the date of this Agreement (the "**End Date**"); *provided*, *however*, that Buyer shall not be entitled to terminate this Agreement pursuant to this Section 6.1(b)(iii) if there has been a violation or breach by Buyer of this Agreement which has prevented or would prevent satisfaction of any condition to the obligations of Sellers set forth in Section 5.1, Section 5.1(a) or Section 5.1(c) above; and *provided*, *further*, *however*, that Buyer shall not be entitled to waive the condition to Closing set forth in Section 5.1(d) until the later of (x) all conditions in Section 5.1 and Section 5.2 (other than Section 5.1(d)) having been satisfied and (y) three (3) months from the date of this Agreement. Notwithstanding the foregoing, if Buyer waives the condition to Closing set forth in Section 5.1(d) in accordance with this Section 6.1(b)(iii), then Sellers shall automatically, and without any further action by any Party, be deemed to have also waived such condition to Closing;

(c) by Sellers:

(i) upon a breach of any representation, warranty, covenant or obligation of Buyer set forth in this Agreement such that the conditions set forth in Section 5.3(a) or Section 5.3(b) above are incapable of being satisfied and, if such breach is curable, such breach is not cured prior to the expiration of 20 days following Buyer's receipt of written notice thereof from Sellers;

(ii) if satisfaction of any of the conditions set forth in Section 5.3(a) or Section 5.3(b) above is or becomes impossible (other than through the failure of Sellers to comply with any of their covenants or obligations under this Agreement); *provided* that Sellers will not be entitled to terminate this Agreement pursuant to this Section 6.1(c) at any time during which Sellers

would be unable to satisfy the conditions set forth in Section 5.2(a) or Section 5.2(b) above;

(iii) if the transactions contemplated hereby have not been consummated by the End Date; *provided, however*, that Sellers shall not be entitled to terminate this Agreement pursuant to this Section 6.1(c)(iii) if there has been a violation or breach by Sellers of this Agreement which has prevented or would prevent satisfaction of any condition to the obligations of Buyer set forth in Section 5.1, Section 5.2(a) or Section 5.2(b) above;

Any proper termination of this Agreement pursuant to this Section 6.1 shall be effective immediately upon the delivery of written notice of the terminating party to the Other Party.

Section 6.2 Effect of Termination. If this Agreement is properly terminated pursuant to Section 6.1 above, all rights and obligations of the Parties hereunder shall terminate without any liability of any Party to any other Party, except for this Section 6.2 and ARTICLE 9 and pursuant to the Confidentiality Agreement, which each shall survive the termination of this Agreement as applicable and in accordance with their terms; *provided, further*, that the termination of this Agreement (including, but not limited to, any termination pursuant to Section 6.1(b)(iii) or Section 6.1(c)(iii)) shall in no way limit any claim by a Party that another Party breached the terms of this Agreement prior to or in connection with such termination, including by failing to consummate the transactions contemplated by this Agreement, nor shall such termination limit the right of such non-breaching Party to seek specific performance and all other remedies available at law or equity.

ARTICLE 7
INDEMNIFICATION

Section 7.1 Survival. The representations and warranties of Sellers and Buyer contained in this Agreement and the covenants and agreements of the Parties set forth in ARTICLE 4 shall survive the Closing and continue in full force and effect thereafter through and including the date that is [***] after the Closing Date, at which time they shall expire and terminate and be of no force or effect, except for (i) the Post-Closing Covenants, which shall survive the Closing in accordance with their respective terms and (ii) claims that are finally determined pursuant to the final judgment of a court of competent jurisdiction to constitute Actual Fraud; *provided*, that (x) the representations and warranties set forth in Section 2.10 and Section 2.12 shall remain in full force and effect and shall survive until [***] and (y) the Fundamental Representations shall remain in full force and effect and shall survive until [***], at which time they shall expire and terminate and be of no force and effect. Without limiting the generality of the foregoing:

(a) it is understood, acknowledged and agreed that, except to the extent provided in Section 7.2(a) and Section 7.2(b) and subject in all respects to the other limitations and conditions set forth in this ARTICLE 7 none of Buyer, its Affiliates (including, following Closing, the Acquired Companies), their direct or indirect equity holders or their respective directors, managers, officers, employees or Representatives shall have any rights, recourse or remedy under this Agreement or otherwise following the consummation of the Closing for (and neither Sellers nor any other Person shall have any Liability of any kind whatsoever for or resulting from) any breach of or inaccuracy in any such representation or warranty or any breach or nonfulfillment of any covenant, condition or agreement required to be performed, complied with, satisfied or fulfilled on or prior to the Closing Date; *provided*, *however*, that neither the foregoing nor anything else contained in this Section 7.1(a)

shall be deemed or construed to apply to limit the rights, recourse and remedies with respect to breach of the Post-Closing Covenants and claims based on Actual Fraud; and

(b) Buyer (on its own behalf and on behalf of its Affiliates, including, following Closing, the Acquired Companies) acknowledges and agrees that neither Sellers, their Affiliates, nor any of their respective Representatives have made, or have been authorized to make, any representation, warranty, promise, inducement or statement of intention in connection with the transactions contemplated by this Agreement that is not embodied in this Agreement and, in furtherance of the foregoing, further acknowledges that any and all such representations, warranties, promises, inducements or statements were and are expressly and specifically disclaimed and that such disclaimers have been expressly accepted by Buyer and its Affiliates.

Section 7.2 Indemnification by Sellers. Subject to the other terms and conditions of this ARTICLE 7, from and after Closing, Sellers shall, jointly and severally, indemnify Buyer or its Affiliates and their respective directors, officers, employees, and agents (collectively, the "**Buyer Indemnitees**") against, and shall hold the Buyer Indemnitees harmless from and against, any and all Adverse Consequences incurred or sustained by, or imposed upon, the Buyer Indemnitee based upon, arising out of, with respect to or by reason of:

(a) any breach of any of the Express Representations made by Sellers in ARTICLE 7 or in the certificate delivered by Sellers pursuant to Section 1.6(c)(xi), not to exceed $1.00; *provided*, that all materiality qualifications (such as "material" and "Material Adverse Effect") in such representations and warranties shall be disregarded for the purposes of this ARTICLE 7, including in connection with determining whether a breach has occurred and the amount of Adverse Consequences incurred;

(b) any breach or non-fulfilment of any of the covenants (including any Post-Closing Covenant), agreements or obligations to be performed by a Seller pursuant to this Agreement;

(c) any Excluded Asset or any Excluded Liability;

(d) any Actual Fraud;

(e) any Seller Indemnified Taxes;

(f) [***]; and

(g) any matter set forth on Schedule 7.2(g).

Section 7.3 Indemnification by Buyer. Subject to the other terms and conditions of this ARTICLE 7, from and after Closing, Buyer shall indemnify Sellers and its Affiliates and their respective directors, officers, employees, and agents (collectively, the "**Seller Indemnitees**") against, and shall hold the Seller Indemnitees harmless from and against, any and all Adverse Consequences incurred or sustained by, or imposed upon, the Seller Indemnitees based upon, arising out of, with respect to or by reason of:

(a) any breach of any of the representations or warranties made by Buyer in ARTICLE 3 or in the certificate delivered by Buyer pursuant to Section 1.6(d)(vi); *provided*, that all materiality qualifications (such as "material" and "Material Adverse Effect") in such representations and warranties shall be disregarded for the purposes

of this ARTICLE 7, including in connection with determining whether a breach has occurred and the amount of Adverse Consequences incurred;

(b) any breach or non-fulfilment of any the covenants (including any Post-Closing Covenant), agreements or obligations to be performed by Buyer pursuant to this Agreement;

(c) any Assumed Liability; and

(d) any Taxes that arise as a result of an action or transaction carried out or effected by any Acquired Company not in the Ordinary Course of Business at any time after Closing on the Closing Date other than an action or transaction entered into by the Acquired Companies prior to Closing or made pursuant to this Agreement.

Section 7.4 Indemnification Procedures.

(a) If a Party entitled to indemnification hereunder (an "**Indemnified Party**") receives notice of the assertion or commencement of any Proceeding made or brought by any Person who is not a Party to this Agreement or an Affiliate of a Party to this Agreement or a Representative of the foregoing (a "**Third-Party Claim**") against such Indemnified Party with respect to which the another Party (the "**Indemnifying Party**") is obligated to provide indemnification under this Agreement, the Indemnified Party shall give the Indemnifying Party prompt written notice thereof. The failure to give such prompt written notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits rights or defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Third-Party Claim in reasonable detail, shall include copies of all material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Adverse Consequences that has been or may be sustained by the Indemnified Party. The Indemnifying Party shall have the right to participate in, or by giving written notice to the Indemnified Party, to assume the defense of any Third-Party Claim at the Indemnifying Party's expense and by the Indemnifying Party's own counsel, and the Indemnified Party shall cooperate in good faith in such defense. In the event that the Indemnifying Party assumes the defense of any Third-Party Claim, subject to Section 7.4(b), it shall have the right to take such action as it deems necessary to avoid, dispute, defend, appeal or make counterclaims pertaining to any such Third-Party Claim in the name and on behalf of the Indemnified Party. The Indemnified Party shall have the right, at its own cost and expense, to participate in the defense of any Third-Party Claim with counsel selected by it subject to the Indemnifying Party's right to control the defense thereof. If the Indemnifying Party elects not to compromise or defend such Third-Party Claim or fails to promptly notify the Indemnified Party in writing of its election to defend as provided in this Agreement, the Indemnified Party may, subject to Section 7.4(b), pay, compromise, defend such Third-Party Claim and seek indemnification for any and all Adverse Consequences based upon, arising from or relating to such Third-Party Claim. Sellers and Buyer shall cooperate with each other in all reasonable respects in connection with the defense of any Third-Party Claim, including making available (subject to the provisions of the Confidentiality Agreement) records relating to such Third-Party Claim and furnishing, without expense (other than reimbursement of actual out-of-pocket expenses) to the defending party, management employees of the non-defending party as may be reasonably necessary for the preparation of the defense of such Third-Party Claim.

(b) Notwithstanding any other provision of this Agreement, the Indemnifying Party shall not enter into settlement of any Third-Party Claim without the prior written consent of the Indemnified Party (which consent shall not be unreasonably withheld, conditioned or delayed), except as provided in this Section 7.4(b). If a firm offer is made to settle a Third-Party Claim without leading to liability or the creation of a financial or other obligation on the part of the Indemnified Party and provides, in customary form, for the unconditional release of each Indemnified Party from all liabilities and obligations in connection with such Third-Party Claim and the Indemnifying Party desires to accept and agree to such offer, the Indemnifying Party shall give written notice to that effect to the Indemnified Party. If the Indemnified Party fails to consent to such firm offer within 10 days after its receipt of such notice, the Indemnified Party may continue to contest or defend such Third-Party Claim and in such event, the maximum liability of the Indemnifying Party as to such Third-Party Claim shall not exceed the amount of such settlement offer. If the Indemnified Party fails to consent to such firm offer and also fails to assume defense of such Third-Party Claim, the Indemnifying Party may settle the Third-Party Claim upon the terms set forth in such firm offer to settle such Third-Party Claim. If the Indemnified Party has assumed the defense pursuant to Section 7.4(b), it shall not agree to any settlement without the written consent of the Indemnifying Party (which consent shall not be unreasonably withheld, conditioned or delayed).

(c) Any claim by an Indemnified Party on account of an Adverse Consequence which does not result from a Third-Party Claim (a "**Direct Claim**") shall be asserted by the Indemnified Party giving the Indemnifying Party prompt written notice thereof. The failure to give such prompt written notice shall not, however, relieve the Indemnifying Party of its indemnification obligations, except and only to the extent that the Indemnifying Party forfeits rights or defenses by reason of such failure. Such notice by the Indemnified Party shall describe the Direct Claim in reasonable detail, shall include copies of all material written evidence thereof and shall indicate the estimated amount, if reasonably practicable, of the Adverse Consequences that have been or may be sustained by the Indemnified Party. The Indemnifying Party shall have 30 days after its receipt of such notice to respond in writing to such Direct Claim. During such 30-day period, the Indemnified Party shall allow the Indemnifying Party and its professional advisors to investigate the matter or circumstance alleged to give rise to the Direct Claim, and whether and to what extent any amount is payable in respect of the Direct Claim and the Indemnified Party shall assist the Indemnifying Party's investigation by giving such information and assistance (including access to the Indemnified Party's premises and personnel and the right to examine and copy any accounts, documents or records) as the Indemnifying Party or any of its professional advisors may reasonably request. If the Indemnifying Party does not so respond within such 30-day period, the Indemnifying Party shall be deemed to have rejected such claim, in which case the Indemnified Party shall be free to pursue such remedies as may be available to the Indemnified Party on the terms and subject to the provisions of this Agreement.

Section 7.5 Certain Limitations and Exclusive Remedies.

(a) *Cap*. Notwithstanding anything to the contrary set forth herein, Sellers' aggregate maximum liability under Section 7.2(a), with respect to breaches of the representations and warranties set forth in ARTICLE 2 shall not exceed One Dollar ($1.00) (the "**Cap**"); *provided*, *however*, that the Cap will not apply to claims based on Actual Fraud.

(b) Buyer, on its own behalf and on behalf of its Affiliates and their respective Representatives, and Sellers, on their own behalf and on behalf of their Affiliates and their Representatives, acknowledge and agree that from and after the Closing, their sole and exclusive rights, recourse and remedies for any and all Adverse Consequences sustained or incurred by any of them (or any of their respective successors or assigns) arising out of, resulting from or in connection with the Agreement or the transactions contemplated hereby shall be (i) the right of Buyer to recover Adverse Consequences sustained or incurred by Buyer arising from claims that are finally determined pursuant to a final judgment of a court of competent jurisdiction to constitute Actual Fraud by a Seller with respect to the Express Representations, (ii) the rights of the Parties to enforce and assert claims against a Party that breaches or otherwise fails to perform any Post-Closing Covenant (including the Post-Closing Covenants set forth in Section 7.2 and Section 7.3), (iii) the rights to seek specific performance and injunctive relief expressly permitted hereunder, and (iv) the rights of Buyer with respect to claims and recoveries under and against the R&W Policy. For the avoidance of doubt and notwithstanding anything to the contrary contained herein, as between Buyer and Sellers, to the extent Buyer suffers Adverse Consequences related to a matter that constitutes both (A) a breach of or inaccuracy in any Express Representation and (B) an Excluded Liability or a Seller Indemnified Tax, then any such Adverse Consequences will, for all purposes of this Agreement, be deemed and treated as Adverse Consequences arising from breach of or an inaccuracy in an Express Representation and not an Excluded Liability or Seller Indemnified Tax; *provided*, *however*, that notwithstanding the foregoing, such Adverse Consequences shall be treated as arising from an Excluded Liability or a Seller Indemnified Tax (as and to the extent applicable) to the extent that (1) the underwriter(s) of the R&W Policy (the "**R&W Insurer**") denies Buyer's claim under the R&W Policy in respect thereof after Buyer's diligent pursuit thereof, (2) the claim is subject to the self-insured retention amount under the R&W Policy, (3) the R&W Insurer has then paid out claims to Buyer as required by the R&W Policy in an aggregate amount equal to the policy limit of the R&W Policy, or (4) the R&W Insurer has otherwise denied coverage for the Adverse Consequence under the R&W Policy.

(c) No Person will be entitled to be indemnified for an amount pertaining to any Adverse Consequence to the extent that such amount was included in the calculation of Final Closing Net Working Capital or included as Closing Debt or Closing Transaction Expenses for purposes of the calculation of the Final Closing Cash Payment. The amount of any Adverse Consequences that any Indemnified Party will be entitled to recover hereunder will be determined without duplication of recovery by reason of the state of facts giving rise to such Adverse Consequences constituting a breach of more than one representation, warranty or covenant, or specific indemnification obligation.

Section 7.6 Investigation; Non-Reliance; Disclaimers. Buyer knowingly, willingly, irrevocably and expressly acknowledges and agrees, on behalf of Buyer, its Affiliates, and their respective Representatives, that: (a) each of them has conducted, to their own satisfaction, an independent investigation and verification of the financial condition, results of operations, business, projected operations and business, assets and properties (including the condition thereof), liabilities and affairs of the Acquired Companies, the Business, the Purchased Assets, and the transactions contemplated by this Agreement, none of them has relied on, are not relying on, and will not be entitled to rely on (or assert any

claim based on reliance on), any representations, warranties, statements or disclosures (written or oral, statutory, express, implied or otherwise) heretofore made by or on behalf of either Seller, any of their Affiliates, or any of their respective Representatives (other than the Express Representations for which the sole recourse shall be through claims against the R&W Policy) or on the accuracy, completeness (including any omissions) or materiality of any statements, representations, advice, information, disclosures, data or other materials or documents (in each case, whether written or oral) heretofore furnished or made available to Buyer, any of its Affiliates, or any of their respective Representatives (including, among other things, in any confidential information memorandum, management presentation or similar document, financial statements or other materials, presentations or documents, whether written or oral, express or implied) by or on behalf of any of either Seller, any of their Affiliates, or any of their respective Representatives; and (b) the forward-looking statements that were provided or made available by or on behalf of Sellers and/or their Representatives have been provided and made available for informational purposes only and are not intended to be and shall not be relied upon for any purpose and, in furtherance thereof, Buyer further acknowledges that (i) Buyer and its Affiliates have accepted the foregoing and understand that the uncertainties inherent in making forward-looking statements, and confirms that Buyer and its Affiliates are and were familiar with such uncertainties, and that they made their own evaluation of, and are taking full responsibility for, the adequacy, completeness and accuracy of all forward-looking statements (including any underlying assumptions), (ii) neither Sellers, any of their Affiliates, their respective Representatives, or any other Person has or is providing any assurances regarding the accuracy or completeness of, or any representations or warranties with respect to, any forward-looking statements, and (iii) neither Buyer nor any of their Affiliates has relied on, will rely on or will assert any claim based on their reliance on any forward-looking statements for any purpose, nor shall any of them have any right, remedy, recourse or other claim against either Seller, any of their Affiliates, or any of their respective Representatives arising from the contents, accuracy, completeness, validity of the forward-looking statements made, provided or made available to Buyer, any of its Affiliates, or any of their respective Representatives, or their use or distribution of, or any representations, warranties, statements or assurances that any of the made with respect to, any of the forward-looking statements or any information contained therein.

Section 7.7 R&W Policy. Buyer agrees that, at Closing, Buyer shall obtain and bind a buy-side representation and warranty insurance policy that includes terms consistent with the following: (a) an acknowledgement and agreement that the insurer shall have not, and shall waive and agree not to pursue, any subrogation rights against either Seller or any of their Affiliates (regardless of whether such rights may otherwise exist under applicable Law), except for subrogation to the rights expressly granted to Buyer hereunder with respect to claims finally determined pursuant to a final judgment of a court of competent jurisdiction to constitute Actual Fraud by a Seller, but subject, in each case, to any limitations, requirements and exclusions applicable to Buyer's rights, remedies and recourse therefor contained in this ARTICLE 7 or elsewhere in this Agreement, (b) Sellers and their Affiliates are express and intended third party beneficiaries of the acknowledgements, agreements and waivers described in clause (a) above; (c) providing that neither Buyer nor any other insured thereunder shall have any obligation to institute, maintain or otherwise pursue any claim, Proceeding, right, remedy or recourse against either Seller or any of their Affiliates in connection with any Liabilities arising from any breach or inaccuracy in any representation or warranty; and (d) other provisions consistent with those included in the R&W Policy. Buyer agrees not to permit any amendment or modification to the R&W Policy that reduces the policy limit thereof or results in the R&W Policy containing provisions that are inconsistent

with or in contravention of those described in clauses (a) or (b) above or that could otherwise expose either Seller or any of their Affiliates to any liability or claim arising from or relating to the R&W Policy or any representations or warranties insured thereunder (including, for the avoidance of doubt, any amendment or modification affecting the subrogation or exclusion provisions), in each case, without the express written consent of Sellers. Any costs and expenses related to the R&W Policy, including the total premium, underwriting costs, brokerage commission for Buyer's broker, Taxes incurred or payable with respect to the R&W Policy or in connection with, or as a result of, the issuance thereof shall be borne and paid solely and exclusively by Buyer.

ARTICLE 8
DEFINITIONS

Section 8.1 Certain Definitions. For purposes of this Agreement, the following terms shall have the meanings set forth in this Section 8.1.

"**Accrued Clinical Trial Costs**" means (i) for purposes of determining the Estimated Closing Cash Payment, the absolute value of Sellers' good faith estimate of the aggregate amount of the accrued costs related to the CHIK VLP clinical trials Acct# [***] as of the Closing Date as reflected in the Estimated Closing Statement delivered in accordance with Section 1.4 or (ii) for all other purposes of this Agreement, including for purposes of determining the Final Closing Cash Payment, the aggregate amount of accrued costs related to the CHIK VLP clinical trials Acct# [***] as of the Closing Date as finally determined in accordance with Section 1.7, as applicable.

"**Actual Fraud**" means (a) with respect to a Seller, the knowing and intentional misrepresentation of material fact in the making of any of the Express Representations by such Seller with the intent to mislead or deceive Buyer in a manner that constitutes common law fraud under Delaware Law, and (b) with respect to Buyer, the knowing and intentional misrepresentation of material fact in the making of any of the representations and warranties expressly set forth in ARTICLE 3 by Buyer with the intent to mislead or deceive a Seller in a manner that constitutes common law fraud under Delaware Law, in each case, as finally determined pursuant to a final order issued by a court of competent jurisdiction (but subject to and after giving effect to any applicable terms, conditions, limitations, exclusions and requirements contained in this Agreement).

"**Adverse Consequence**" means any expense, loss, Liability, or other damages (including any penalty, fine, excise or similar Tax, judgment, settlement payment, fee, assessment, reasonable legal and other professional fees, costs, and other dispute resolution expenses)); *provided*, *however*, except to the extent paid or owed to a third party in a Proceeding brought by a third party for which a Person is entitled to be indemnified hereunder, Adverse Consequence does not include (a) non-economic, exemplary, or punitive damages, or (b) any damages not reasonably foreseeable as a probable result of the action or event giving rise to the damages.

"**Affiliate**" means, as applied to any Person, any other Person who, directly or indirectly, through one or more intermediaries, controls, is controlled by, or is under common control with, such Person. For purposes of this definition, "**control**" means the possession, directly or indirectly, through one or more intermediaries, of the power to direct the management and policies of a Person, whether through the ownership of stock, by Contract or otherwise.

"**Agreed Calculation Principles**" means (a) the accounting and calculation principles, methods, policies, practices, procedures, classifications, elections, judgments or

estimation methodologies (including with respect to the calculation, determination and/or establishment of reserves or other discretionary or estimated amounts) expressly set forth or described on Exhibit 8.1(A) attached hereto as determined after giving effect to any adjustments or exclusions set forth or described therein and as used and applied consistently with the use and application thereof in the illustrative calculation of Net Working Capital attached hereto, regardless of whether inconsistent with, or different from, those permitted or required under GAAP or those otherwise used or applied by Sellers for any other purposes, including, for purposes of the preparation of any of the Financial Statements described in Section 2.7 (*Financial Statements*) (or the calculation or determination of any line item, amount or component reflected in or otherwise included or taken into account in the calculation or determination of those reflected therein) or any other financial statements, reports or information prepared by or on behalf of Sellers, and (b) to the extent not inconsistent with those described in clause (a) above, GAAP as applied and used connection with the preparation of the Recent Balance Sheet, including with respect to any elections or other discretionary methodologies or principals permitted under GAAP.

"**Arbitrator**" means any organization or association that sponsors, authorizes, or conducts any arbitration Proceeding, or any arbitrator or panel of arbitrators, the decisions of which are enforceable in any court of law.

"**Business Day**" means any day that is not a Saturday, a Sunday or another day on which banks are required or authorized by Law to be closed in the State of Delaware.

"**Channel Stuffing**" means the inflation of sales of a Product in a certain period by selling a substantially greater quantity of such Product to distributors than such distributors could reasonably be expected to require in order for such distributors to meet forecasted demand for such Product in the ordinary course of business.

"**CHIK Application**" means [***].

"**CHIK VLP**" means the Seller and its Affiliates' virus like particle vaccine candidate for the prevention of disease caused by Chikungunya virus in the form currently subject to phase III clinical trials.

"**Closing Cash**" means the sum of: (a) the aggregate amount of cash, cash equivalents and marketable securities of the Acquired Companies, including outstanding security and similar deposits, minus (b) the aggregate amount of all outstanding checks of the Acquired Companies, plus (c) the aggregate amount of all checks, money orders and other wire transfers and drafts deposited or available for deposit for the account of the Acquired Companies, in each case, determined in accordance with GAAP as of the Closing Effective Time, without giving effect to the consummation of the transactions contemplated by this Agreement (including any and all effects of any purchase accounting adjustments).

"**Closing Debt**" means the aggregate Indebtedness of the Acquired Companies outstanding as of immediately prior to Closing which will be calculated and determined in accordance with Exhibit 8.1(C) (*Illustrative Net Debt Calculation)*.

"**Closing Net Working Capital**" means Net Working Capital as of the Closing Effective Time, without giving effect to the consummation of the transactions contemplated by this Agreement (including any and all effects of any purchase accounting adjustments).

"**Closing Tax Liability Amount**" means an amount equal to the liability of the Acquired Companies with respect to Pre-Closing Taxes that remain unpaid and are not yet due and payable as of the Closing Date as of the Closing Date, whether or not due and payable, in each case, as calculated and determined as of the end of the Closing Date and

after giving effect to and taking into account any reductions thereto arising from or attributable to any Transaction Tax Deductions to the extent such deductions are properly deductible in a Pre-Closing Tax Period at a "more likely than not" standard (or higher level of confidence); *provided* that the Closing Tax Liability Amount shall not include any liability for Taxes resulting from the revocation (in whole or in part) of the Tax holiday granted under the Tax Holiday Decree arising out of or related to Buyer's or Berna's actions or inactions following the Closing in violation of the terms and conditions of Sections 4 or 5 of the Tax Holiday Decree.

"**Closing Transaction Expenses**" means all Transaction Expenses, to the extent unpaid as of immediately prior to Closing.

"**Code**" means the United States Internal Revenue Code of 1986, as amended.

"**Commercially Reasonable Efforts**" means [***].

"**Contract**" means any written or oral agreement, contract, indenture, lease, instrument, arrangement, commitment or obligation that is legally binding (in each case, including any amendments and modifications thereto).

"**Debt Facilities**" means the debt facilities entered into between the Buyer or any of its Affiliates and the Debt Provider on the terms of the Debt Commitment Letter or any alternative financing entered into by the Buyer or any of its Affiliates pursuant to the terms of Section 4.11.

"**Debt Financing**" means the debt financing pursuant to the Debt Facilities.

"**Disclosure Schedule**" means the schedules delivered in connection with this Agreement which: (a) set forth the information specifically described in certain of the representations and warranties contained in ARTICLE 2; and (b) set forth exceptions or qualifications to the representations and warranties contained in ARTICLE 2.

"**EMA**" means the European Medicines Agency or any successor thereto.

"**Employee Benefit Plan**" means any Benefit Plan which includes any "employee pension benefit plan" (as defined in Section 3(2) of ERISA), any "employee welfare benefit plan" (as defined in Section 3(1) of ERISA), in each case, whether or not subject to ERISA, and any other compensation or benefit, program, plan, policy, Contract (other than statutory or Tax-based programs such as workers' compensation or social security), including insurance coverage, severance or retention compensation or benefits, disability benefits, deferred compensation, bonuses, stock options, stock purchase, phantom stock, stock appreciation or other forms of incentive compensation or post-retirement compensation which is maintained or contributed to by a Seller or an Acquired Company or any of their respective Affiliates or ERISA Affiliates for the benefit of current or former consultants, directors or employees of the Business or an Acquired Company or with respect to which an Acquired Company has or would reasonably expect to have any Liability (including on account of any ERISA Affiliate).

"**Encumbrance**" means any charge, claim, equitable interest, mortgage, lien (including liens for Taxes), easement, option, warrant, purchase right, pledge, security interest, right of first refusal, marital or community property interest or restriction of any kind, including any restriction on use, voting (in the case of any security), transfer, receipt of income or exercise of any other attribute of ownership, in each case, whether voluntarily imposed or arising by operation of Law.

"**Environment**" means soil, land surface or subsurface strata, surface waters (including navigable waters and ocean waters), groundwater, drinking water supply, stream sediments, ambient or indoor air, facilities and structures, and all natural resources, plant and wild-life.

"**Environmental Document**" means: (a) any environmental study, evaluation or investigation relating to the assets, property or operations of the Business or an Acquired Company, including: (i) any Phase I or Phase II (or subsequent phase) studies and investigations; (ii) documents and information related to any improvements or buildings on any real property; and (iii) any testing, sampling, analysis, digging, boring, removing soil, relocating of soil or preparation of baseline environmental assessments relating to the Environment or any real property; (b) consent agreements, inspection reports, letters and notices of violation and related correspondence with any Governmental Body; (c) free product recovery reports, monitoring well assessments and related correspondence and materials; and (d) other documents materially bearing on Environmental Liabilities of Sellers in the operation of the Business or of an Acquired Company.

"**Environmental Law**" means any Law relating to pollution or protection of the Environment, including those designed to: (a) notify Governmental Bodies, employees or the public of intended, threatened or actual releases of any Hazardous Substance in violation of environmental permits or other applicable Law; (b) prevent, regulate or require the reporting of the use, discharge, release or emission of Hazardous Substances into the Environment; (c) reduce the quantities, prevent the release and minimize Hazardous Substances that are generated; (d) regulate the generation, management, treatment, storage, handling, transportation or disposal of Hazardous Substances; (e) assure that products are designed, formulated, packaged or used so that they do not present unreasonable risks to public health or the Environment when used or disposed of; or (f) provide for or require the cleanup of Hazardous Substances that have been released into the Environment without a permit or otherwise in violation of Law, including the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986, 42 U.S.C. §§ 9601 et seq.; the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act of 1976, as amended by the Hazardous and Solid Waste Amendments of 1984, 42 U.S.C. §§ 6901 et seq.; the Federal Water Pollution Control Act of 1972, as amended by the Clean Water Act of 1977, 33 U.S.C. §§ 1251 et seq.; the Toxic Substances Control Act of 1976, as amended, 15 U.S.C. §§ 2601 et seq.; the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. §§ 11001 et seq.; the Clean Air Act of 1966, as amended by the Clean Air Act Amendments of 1990, 42 U.S.C. §§ 7401 et seq.; and the Occupational Safety and Health Act of 1970, as amended, 29 U.S.C. §§ 651 et seq.

"**Environmental Liability**" means any Adverse Consequence or other Liability of Sellers related to the operation of the Business or of the Acquired Companies, in each case, arising from or relating to any violation of or Liability under any Environmental Law with respect to facts, events or conditions occurring or in existence on or before the Closing Date.

"**Equity Interests**" means, with respect to any Person: (a) any partnership interests; (b) any membership interests or units; (c) any shares in the capital of such Person or shares of capital stock; (d) any subscriptions, calls, warrants, options, or commitments of any kind or character relating to, or entitling any Person to purchase or otherwise acquire membership interests or units, shares in the capital of such Person, shares of capital stock, or any other equity securities; (e) any securities convertible into or exercisable or exchangeable for partnership interests, membership interests or units, shares in the capital of such Person,

shares of capital stock, or any other equity securities; or (f) any other interest classified as an equity security of such Person.

"**ERISA**" means the Employee Retirement Income Security Act of 1974, as amended.

"**ERISA Affiliate**" means any Person that at any relevant time is or was considered a single employer with a Seller or an Acquired Company under Section 414 of the Code or under ERISA Section 4001(b), or part of the same "controlled group" as a Seller or an Acquired Company for purposes of ERISA Section 302(d)(3).

"**Exploit**" (and related terms such as "**Exploitation**" or "**Exploited**") means to (a) manufacture, have manufactured, package, label, import, export, sell, offer for sale, have sold, research, develop (including seeking, obtaining or maintaining Product Registrations and conducting clinical and nonclinical studies), commercialize, register, store, transport, distribute, promote, market, price, supply or otherwise dispose of, or use for purposes of any of the foregoing, or (b) license or otherwise permit any Person to conduct any of the foregoing.

"**FDA**" means the U.S. Food and Drug Administration or any successor thereto.

"**FDCA**" means the U.S. Federal Food, Drug and Cosmetic Act

"**Final Closing Cash Payment**" means an aggregate amount equal to: (a) the Base Cash Amount, plus (b) the amount, if any, by which the Closing Net Working Capital exceeds the Target Amount, minus (c) the amount, if any, by which the Target Amount exceeds the Closing Net Working Capital, *plus* (d) the Closing Cash, *minus* (e) the Closing Debt, *minus* (f) the Closing Transaction Expenses, *minus* (g) the Closing Tax Liability Amount in the case of the foregoing clauses (b) - (g), as finally determined in accordance with Section 1.7 above (whether as a result of a failure to timely deliver an Objection Notice, mutual resolution of Sellers and Buyer, determination by the Accounting Firm, or any combination thereof).

"**Final Closing Net Working Capital**" means Closing Net Working Capital, as finally determined in accordance with Section 1.7 above (whether as a result of a failure to timely deliver an Objection Notice, mutual resolution of Sellers and Buyer, determination by the Accounting Firm, or any combination thereof).

"**Fundamental Representations**" means those representations and warranties of Seller and Buyer, as applicable, contained in Section 2.1, Section 2.2, the first sentence of Section 2.6(a), Section 2.21, Section 3.1, Section 3.2, Section 3.5 and Section 3.8.

"**GAAP**" means United States generally accepted accounting principles, consistently applied.

"**Government Contracts**" means any Contract, including any prime contract, material subcontract (at any tier), basic ordering agreement, letter contract, teaming agreement, material purchase order, material delivery order, material task order, or other contractual arrangement of any kind, as modified by binding modifications or change orders, with (a) any Governmental Body, (b) any prime contractor of any Governmental Body, or (c) any subcontractor (at any tier) with respect to any Contract of a type described in clauses (a) or (b) above.

"**Governmental Authorization**" means any approval, consent, license, registration, permit, waiver or other authorization issued, granted, given or otherwise made available by or under the authority of any Governmental Body or pursuant to any Law.

"**Governmental Body**" means any: (a) nation, state, county, city, town, village, district, or other jurisdiction of any nature; (b) federal, state, local, municipal, foreign, or other government; (c) governmental or quasi-governmental authority of any nature (including any governmental agency, branch, department, commission, board, instrumentality, official, or entity and any court or other tribunal); (d) multi-national organization or body; or (e) body exercising, or entitled to exercise, any administrative, executive, judicial, legislative, police, regulatory, or taxing authority. For the avoidance of doubt "Governmental Body" includes any applicable regulatory authority such as the FDA, EMA, or MHRA.

"**Hazardous Substance**" means: (a) any substance, waste or material that is controlled or regulated by or for which Liability may be imposed under any Environmental Law, including oil, petroleum or derivatives thereof; or (b) any substance or condition that is toxic, explosive, corrosive, flammable, infectious, carcinogenic, mutagenic or otherwise hazardous to the Environment or public health, including polychlorinated biphenyls, asbestos and asbestos containing materials, radiation, noise, odors, mold or microbial agents; provided, however, that Hazardous Substance will not include typical office supplies (i.e., printer/copier toner cartridges, inks, correction fluids, etc.) or personal care items (i.e., cosmetics, medicines, perfumes, colognes, deodorants, fragrances, fingernail polishes, etc.).

"**Health Care Laws**" means the FDCA, the PHSA, the federal Anti-Kickback Statute (42 U.S.C. § 1320a-7b(b)); the Anti-Inducement Law (42 U.S.C. § 1320a-7a(a)(5)); the Stark Law (42 U.S.C. §1395nn); the civil False Claims Act (31 U.S.C. §§ 3729 et seq.); the administrative False Claims Law (42 U.S.C. § 1320a-7b(a)); the Exclusion Laws (42 U.S.C. § 1320a 7); the Medicare statute (Title XVIII of the Social Security Act), including Social Security Act §§ 1860D-1 to 1860D-43 (relating to Medicare Part D and the Medicare Part D Coverage Gap Program); the Medicaid statute (Title XIX of the Social Security Act); the Physician Payment Sunshine Act (42 U.S.C. § 1320a-7h); HIPAA; the Controlled Substances Act (21 U.S.C. § 801 et seq.); Titles XVIII (42 U.S.C. § 1395 et seq.) and XIX (42 U.S.C. § 1396 et seq.) of the Social Security Act; 35 U.S.C. §§200-212, the Federal Technology Transfer Act of 1986; 15 U.S.C. §3710(a); 37 C.F.R. Part 404; all applicable requirements relating to current good manufacturing practices, good laboratory practices, good clinical practices, informed consent and institutional review boards (as those terms are defined by the FDA); all applicable requirements relating to clinical trials or the protection of human subjects contained in 21 CFR Parts 50, 54, 56, and 312 and 42 CFR Part 11, and the International Conference on Harmonization E6: Good Clinical Practices Consolidated Guideline; all applicable and comparable Laws in any other jurisdiction and all applicable and comparable Laws administered by the FDA, the EMA, MHRA and other applicable Governmental Bodies with respect to the Exploitation of drug, biologic or vaccine products.

"**Hepatitis-A Product**" means any product currently in development by ETHI or its Affiliates for the prophylaxis or prevention of Hepatitis-A.

"**Indebtedness**" means the following liabilities and obligations of the Acquired Companies on a consolidated basis and without duplication: (a) any indebtedness (and any pay-in-kind or deferred interest and any prepayment premiums with respect thereto) for money borrowed, including that evidenced by notes, bonds, indentures, debentures or other instruments and any interest accrued thereon; (b) accrued but unpaid interest on any obligation described in clause (a) above; (c) any outstanding guaranties of obligations of the type described in clauses (a) and (b) above; and (d) the amount of any undrawn letters of credit, performance bonds, bankers acceptances or similar obligations. For the avoidance of doubt, "Indebtedness" will not include any intercompany obligations between the Acquired Companies, or any Transaction Expenses.

"**Intellectual Property Agreements**" means all licenses, sublicenses and other agreements by or through which other Persons grant ETHI or its Affiliates or ETHI or its Affiliates grants any other Persons any exclusive or non-exclusive rights or interests in or to any Intellectual Property Assets, Owned Business Intellectual Property, or Licensed Business Intellectual Property.

"**Intellectual Property Rights**" means: (a) all trademarks, trade dress, service marks, trade names, business names, designs, logos, slogans, internet domain names and other indicia of source or origin, together with all translations, adaptations, derivations, and combinations thereof, all applications, registrations, and renewals in connection therewith, the rights related thereto, and all goodwill associated with any of the foregoing; (b) all copyrights, all copyright registrations and copyright applications and renewals in connection therewith, and all moral rights and all other rights associated with any of the foregoing, including the underlying works of authorship and other works of authorship (whether or not copyrightable), and all data, databases and database rights; (c) all patents and patent applications, and patent disclosures, together with all reissues, continuations, continuations-in-part, revisions, divisionals, extensions, and reexaminations in connection therewith and counterparts thereof and all international and other rights associated therewith; and (d) all know-how, discoveries, improvements, designs, trade secrets, technologies, processes, methods, techniques, protocols, formulae, algorithms, compositions, industrial models, architectures, layouts, designs, drawings, plans, specifications, methodologies, confidential information, and ideas.

"**IRS**" means the United States Internal Revenue Service.

"**Law**" means any law, ordinance, principle of common law (including equitable principles), statute, code, regulation, rule or treaty enacted, issued or promulgated by any Governmental Body.

"**Liability**" means any debt, liability or obligation (whether direct or indirect, known or unknown, matured or contingent, accrued or unaccrued, liquidated or unliquidated, or due or to become due), and including all costs and expenses relating thereto.

"**Licensed Business Intellectual Property**" means all Intellectual Property Rights licensed to ETHI or its Affiliates under the Intellectual Property Agreements together with all Intellectual Property Rights licensed to any Acquired Company.

"**Lookback Period**" means the period since December 31, 2019.

"**Material Adverse Effect**" means any event, circumstance, change, effect or condition that, individually or in the aggregate is materially adverse to the Purchased Assets, assets, properties, financial condition, or results of operations of the Business and the Acquired Companies taken as a whole or that prevents Sellers from consummating the transactions contemplated by this Agreement; *provided, however*, that none of the following changes will constitute, or will be considered in determining whether there has occurred, and no event, circumstance, change, effect or condition resulting from or arising out of any of the following will constitute, a Material Adverse Effect: (a) the announcement of the execution of this Agreement or any other Transaction Document or the intended consummation of the transactions contemplated herein or therein in accordance with their respective terms (including any threatened or actual impact on any relationship with any customer, vendor, supplier, distributor, landlord or employee of the Business or the Acquired Companies); (b) any condition or change in economic conditions generally affecting the economy or the industries in which the Business operates; (c) any national or international political or social conditions, including the engagement by the United States in hostilities, whether or not

pursuant to the declaration of a national emergency, war or the occurrence of any military or terrorist attack on the United States or any of its territories, possessions, offices or military installations; (d) any acts of God, earthquakes, floods, hurricanes, fires, or other natural disasters or other weather-related event, or national, international, or regional calamity, or any disease outbreak, epidemic or pandemic; (e) any condition affecting financial, banking or securities markets (including any disruption thereof and any decline in the price of any security or market index); (f) any change in any Law, Orders or GAAP; and (g) the taking of any action required or expressly permitted by this Agreement or the other Transaction Documents, including the completion of the transactions contemplated hereby and thereby in accordance with their respective terms; *provided* that, with respect to a matter described in any of the foregoing clauses (c) - (g) of this definition, such matter does not have a disproportionate adverse effect on the Business taken as a whole relative to other comparable businesses operating in the industries in which the Business operates.

"**Medicaid**" means the health insurance program established by Title XIX of the Social Security Act (42 U.S.C. Sections 1396 et seq.) and any successor statute.

"**Medicare**" means the health insurance program for the aged and disabled established by Title XVIII of the Social Security Act (42 U.S.C. Sections 1395 et seq.) and any statute succeeding thereto.

"**MHRA**" means the Medicines and Healthcare products Regulatory Agency or any successor thereto.

"**Multi-Employer Retirement Plan**" is defined in Section 3(37)(A) of ERISA.

"**Net Working Capital**" means the consolidated current assets included among the Purchased Assets or otherwise of the Acquired Companies, less the consolidated current liabilities included among the Assumed Liabilities or otherwise of the Acquired Companies, in each case, using only the balance sheet line items included in the Illustrative Net Working Capital Calculation attached hereto as Exhibit 8.1(B), calculated in accordance with the Agreed Calculation Principles (whether or not consistent with GAAP and without giving effect to the consummation of the transactions contemplated by this Agreement (including any and all effects of any purchase accounting adjustments)). For avoidance of doubt (a) Net Working Capital will exclude Closing Cash, Closing Debt, Closing Transaction Expenses, any current or deferred Tax assets and current or deferred Tax liabilities; and (b) Closing Net Working Capital and Final Closing Net Working Capital (and the components thereof) will be calculated and determined in accordance with Exhibit 8.1(A) (*the Agreed Calculation Principles)* and Exhibit 8.1(B) (*Illustrative Net Working Capital Calculation*) to provide a meaningful comparison of the Final Closing Net Working Capital to the Target Amount; it being understood and acknowledged that it is the intent of the Parties that, for purposes of the calculation and determination of Closing Net Working Capital and Final Closing Net Working Capital, nothing in Section 1.7 above or elsewhere in this Agreement will permit (or be will be deemed or construed as permitting) the Parties or the Accounting Firm to: (i) include or introduce any balance sheet line items or accounts that are different from those included in Exhibit 8.1(B) (*Illustrative Net Working Capital Calculation*); or (ii) make any changes or modifications to the Agreed Calculation Principles or otherwise introduce or use any accounting principles, policies, practices and assumptions, procedures, elections, categorizations or methods (including those relating to the nature of accounts and inclusion of balance sheet line items and the level of reserves and/or accruals, any calculations or estimations thereof or any adjustments thereto) that are different from the Agreed Calculation Principles.

"**Order**" means any award, decree, stipulation, decision, injunction, judgment, order, ruling, subpoena or verdict entered, issued, made or rendered by any Governmental Body.

"**Ordinary Course of Business**" means in accordance with the ordinary and customary day-to-day operations of the applicable Seller in the operation of the Business or of the applicable Acquired Company, in each case, consistent with its past practice with respect to the activity in question.

"**Organizational Documents**" means the organizational documents of a non-natural Person, including, as applicable, the charter, articles or certificate of incorporation, bylaws, articles of organization or certificate of formation, operating agreement or similar governing documents, as amended, and with regard to Berna, its Articles of Association.

"**Other Party**" means (a) with respect to either Seller or references to a Party that refer to either of them, "**Other Party**" means Buyer; and (b) with respect to Buyer or references to a Party that refer to it, "**Other Party**" means Sellers.

"**Owned Business Intellectual Property**" means all of the Intellectual Property Assets together with all Intellectual Property Rights that are owned by any Acquired Company.

"**Permitted Encumbrances**" means: (a) Encumbrances for Taxes not yet due and payable; (b) Encumbrances arising by operation of Laws that do not and would not reasonably be expected to materially detract from the current value of, or materially interfere with, the present use and/or enjoyment of such asset or property in connection with the Ordinary Course of Business; (c) any Encumbrance disclosed on Section 8.1 of the Disclosure Schedule; (d) with respect to any real property, any of the following (i) Encumbrances arising pursuant to the terms of the applicable lease or that are otherwise listed or identified as exceptions in any title search, survey, title insurance policy or similar document or report related to any such real property that was made available to, or obtained by, Buyer or its Representatives prior to the date of this Agreement, (ii) any Encumbrances arising from the cantonal building inventory for the preservation of historical sites (*Inventar der Baudenkmäler*), or (iii) other Encumbrances not included or described in (d)(i) or (ii) above that (A) either arise under or pursuant to any zoning, land use or other applicable Laws, is stated in the relevant land registry excerpt of a Swiss real estate property or would otherwise be identified or reflected in a search of the publicly available records maintained in any jurisdiction that relate to, include or affect any such real property (including, among others, any such records relate to or that list or identify (1) the record owners or holders thereof or of any mortgages or other evidence of Indebtedness secured thereby, (2) the classification or zoning thereof, or (3) any covenants or other restrictions or rights applicable thereto), and (B) do not and would not reasonably be likely to materially impair the continued use or occupancy of such property by an Acquired Company; and (e) Encumbrances to be discharged at Closing upon the discharge by Buyer of Closing Debt.

"**Person**" means any individual, corporation (including any non-profit corporation), general or limited partnership, limited liability company, joint venture, estate, trust, association, organization, Governmental Body or other entity.

"**PHSA**" means the U.S. Public Health Services Act.

"**Post-Closing Covenants**" means, collectively, the covenants or agreements contained in this Agreement that, by their terms, are expressly required to be performed or complied with following the Closing Date.

"**Pre-Closing Tax Period**" means any Tax period ending on or before the Closing Date and, with respect to Straddle Period, the portion of such Straddle Period ending on and including the Closing Date.

"**Pre-Closing Taxes**" means, without duplication, the aggregate amount of: (a) all Taxes of the Acquired Companies for any Pre-Closing Tax Period; and (b) the employer portion of employment Taxes payable in connection with any transaction, change in control, deferred compensation or similar bonuses payable by any Acquired Company to employees upon consummation of the transactions contemplated hereby; *provided, however*, that Pre-Closing Taxes will not include Taxes that arise as a result of an action or transaction carried out or effected by any Acquired Company not in the Ordinary Course of Business at any time after Closing on the Closing Date other than an action or transaction entered into by the Acquired Companies prior to Closing or made pursuant to this Agreement.

"**Proceeding**" means any action, arbitration, mediation, examination, hearing, claim, litigation, lawsuit or other similar proceeding (whether civil, criminal or administrative) commenced, brought, conducted or heard by or before any Governmental Body, mediator or Arbitrator, including any investigation conducted in anticipation of or in connection with any such proceeding, and including any rehearing, appeal, remand, or other review of any such proceeding or any action to enforce any such proceeding.

"**Product Candidates**" means CHIK VLP and the Hepatitis-A Product.

"**Product Registrations**" means all Governmental Authorizations, including all applications, licenses, and approvals necessary to Exploit each Transferring Product, including any approval of a marketing authorisation application, biologics license application, clinical trial application, investigational new drug application and new drug application.

"**Products**" means Vivotif and Vaxchora.

"**R&W Insurance Binder**" means each buy-side representation and warranty insurance policy binder, dated as of the date hereof, by and between Buyer or its Affiliate and Indian Harbor Insurance Company and Euclid Transactional, LLC, as applicable, pursuant to which the R&W Policy is bound and that was delivered to Sellers by Buyer concurrently with the execution of this Agreement.

"**R&W Policy**" means the buy-side representations and warranty insurance policy form attached to the R&W Insurance Binder.

"**Regulatory Documents**" means all submissions, filings and correspondence with Governmental Bodies, including the FDA, EMA, MHRA, European Commission, the Centers for Disease Control and Prevention and the Animal and Plant Health Inspection Service of the United States Department of Agriculture.

"**Representative**" means, with respect to a particular Person, any director, officer, manager, managing member, employee, agent, consultant, advisor or other representative of such Person, including legal counsel, accountants and financial advisors.

"**Review Board**" means all institutional review boards, privacy boards, data safety monitoring boards or ethics committees responsible for review, oversight or approval of any clinical trial involving any Product.

"**Seller Indemnified Taxes**" means, without duplication: (a) any Pre-Closing Taxes not included or taken into account in the determination of Closing Net Working Capital, Closing Tax Liability Amount or otherwise included or taken in to account in the calculation of the Final Closing Cash Payment, any Price Component or any other amount or component

thereof; (b) any liability for Taxes relating to the Purchased Assets for any Pre-Closing Tax Period; (c) any liability of any Seller for Taxes; (d) any liability of any Acquired Company or any Seller for Taxes of any other Person as a result of Treasury Regulation §1.1502-6 or any analogous or similar state, local or non-U.S. law or regulation or as a result of filing any consolidated, combined, unitary or aggregate Tax Return with such Person prior to the Closing Date; or (e) any liability of any Acquired Company or any Seller for Taxes as a transferee or successor by law, pursuant to a contract entered into prior to the Closing Date, or any other relationship in existence as of the Closing Date; but *excluding*, *however*, any liability for Taxes resulting from the revocation (in whole or in part) of the Tax holiday granted under the Tax Holiday Decree arising out of or related to Buyer's or Berna's actions or inactions following the Closing in violation of the terms and conditions of Sections 4 or 5 of the Tax Holiday Decree.

"**Seller Released Parties**" means, collectively, Sellers, their Affiliates and their respective directors, managers, officers, employees, direct or indirect equity holders, agents, heirs, personal representatives, successors and assigns.

"**Sellers' Knowledge**" or "**Knowledge of Sellers**" means the actual knowledge, after reasonable inquiry, of [***].

"**Solvent**" means, with respect to any Person, that: (a) the present fair saleable value of the assets owned by such Person exceeds the amount required to pay its probable liability on its existing debts as they become absolute and matured; (b) such Person does not have an unreasonably small amount of capital with which to engage in its business; and (c) such Person will be able to pay its debts and liabilities as they become due.

"**Straddle Period**" means any Tax period that begins on or before the Closing Date and ends after the Closing Date.

"**Swiss Tax Ruling**" means the Tax rulings related to Berna from the competent cantonal and federal Tax authorities determining whether [***].

"**Target Amount**" means an amount equal to (i) $[***] *minus* (ii) the Accrued Clinical Trial Costs.

"**Tax**" or "**Taxes**" means any governmental income, gross receipts, premiums, profits, capital, franchise, withholding, payroll, employment, social security, workers compensation, unemployment, disability, property, ad valorem, stamp, excise, registration, occupation, service, sales, use, license, lease, transfer, import, export, customs, value added, severance, environmental, alternative or add-on minimum, estimated or other similar tax (including any fee, assessment, levy, tariff, charge, or duty in the nature of or in lieu of any tax), and any interest, penalties, additions, or additional amounts in respect of the foregoing, whether disputed or not. The term "Tax" includes, with respect to any Person, such Person's liability for Taxes imposed on any consolidated or combined basis, and such Person's obligations to indemnify or otherwise assume or succeed to the Tax liability of any other Person (other than pursuant to this Agreement).

"**Tax Holiday Decree**" means that certain decree [***].

"**Tax Return**" means any return (including any information return), report, statement, schedule, notice, form, or other document or information filed with or submitted to, or required to be filed with or submitted to, any Governmental Body in connection with the determination, assessment, collection, or payment of any Tax or in connection with the administration, implementation, or enforcement of or compliance with any Law relating to any Tax.

"**Transaction Documents**" means this Agreement and all other agreements to be executed and delivered by a Party in connection with the consummation of the transactions contemplated by this Agreement.

"**Transaction Tax Deductions**" means any and all deductions or other Tax benefits arising from or as a result of or otherwise attributable to (a) any Transaction Expenses (including those included in the Closing Transaction Expenses) or (b) any other fee, cost, expense or amount incurred, paid, payable or otherwise borne economically by or on behalf of any Seller, to the extent arising from or as a result of or otherwise attributable to this Agreement, the transactions contemplated hereby (including unamortized debt financing costs and debt prepayment fees in respect of the Closing Debt retired as contemplated in this Agreement, employee bonuses, the employer portion of any payroll Taxes due in connection therewith), in each case, regardless of whether paid prior to, on or after the Closing Date.

"**Transaction Expenses**" means all fees, disbursements, costs, and expenses incurred by or on behalf of any Acquired Company in connection with this Agreement, the other Transaction Documents, or the consummation of the transactions contemplated hereby or thereby or any other transaction that constitutes an Alternative Transaction (in each case, to the extent payable or owed by any Acquired Company, and whether invoiced before or after Closing, or otherwise secured or guaranteed by any Acquired Company or any of the Purchased Assets), including: (a) all brokers', finders', or investment bankers' fees incurred by or on behalf of any Acquired Company in connection with the negotiation, preparation, execution, and consummation of the transactions contemplated hereby or an Alternative Transaction; and (b) fees and expenses of legal counsel, accountants, or other professional advisors incurred by or on behalf of any Acquired Company in connection with this Agreement, the other Transaction Documents, or the consummation of the transactions contemplated hereby or thereby or an Alternative Transaction.

"**Transferring Inventory**" means:

(i) the Inventory; and

(ii) all inventory, finished goods, raw materials, work in progress, packaging, supplies, parts and other inventories related to the Transferring Products in the possession of the Acquired Companies.

"**Transferring Products**" means the Products and the Product Candidates.

"**Vaxchora**" means the oral cholera vaccine currently commercialized by Sellers and the Acquired Companies under the trade name Vaxchora®.

"**Vivotif**" means the oral typhoid vaccine currently commercialized by Sellers and the Acquired Companies under the trade name Vivotif®.

"**WARN Act**" means the Worker Adjustment and Retraining Notification (WARN) Act Pub. L. 100 379.102 stat. 890 (1988), as amended, codified at 29 U.S.C. 2101 et seq.

ARTICLE 9
GENERAL PROVISIONS

Section 9.1 Binding Effect; Benefits; Assignment. The terms of this Agreement and the other Transaction Documents executed by a Party will be binding upon, inure to the benefit of and be enforceable by and against such Party and its legal representatives, successors and authorized assigns. Except: (a) as otherwise expressly provided in this Agreement or another Transaction Document; (b) for the provisions of Section 4.4 above, which are intended for the benefit of, and will be enforceable by, D&O Indemnified Persons

and the other Persons identified therein; (c) for the provisions of Section 9.14 below, which are intended for the benefit of, and will be enforceable by, the Designated Persons, and (d) for the provisions of Section 9.15 below, which are intended for the benefit of, and will be enforceable by, the Non-Recourse Parties, nothing in this Agreement or such other Transaction Document, express or implied, is intended to confer upon any other Person any rights or remedies under or by reason of this Agreement or such other Transaction Document, this Agreement and the other Transaction Documents being for the exclusive benefit of the Parties and their respective legal representatives, successors and authorized assigns. No Party may assign any of its rights or obligations under this Agreement or any other Transaction Document to any other Person without the prior written consent of the Other Party to this Agreement or the other parties to such other Transaction Documents, as applicable, and any such attempted or purported assignment will be null and void; *provided*, *however*, that without obtaining such consent, Buyer may assign any of its rights or delegate any of its obligations, in its sole discretion, under this Agreement (x) to any of its respective controlled Affiliates and (y) in connection with the acquisition (whether by merger, consolidation, sale or otherwise) of Buyer, as long as, in each case (1) Buyer provides written notice to the Sellers of such assignment and (2) such assignee agrees to be or is, by operation of law or otherwise, bound by the terms and conditions of this Agreement.

Section 9.2 Entire Agreement. This Agreement, the exhibits and schedules to this Agreement (including the Disclosure Schedule), the Confidentiality Agreement and the other Transaction Documents set forth the entire agreement and understanding of the Parties in respect of the transactions contemplated by this Agreement or other Transaction Documents, as applicable, and supersede all prior Contracts, letters of intent, arrangements and understandings relating to the subject matter hereof and thereof. The Confidentiality Agreement will be deemed terminated automatically effectively immediately upon the earlier of: (a) the Closing; and (b) the termination of the Confidentiality Agreement in accordance with its terms. No representation, promise, inducement or statement of intention has been made by any Party in connection with the transactions contemplated by this Agreement or other Transaction Document that is not embodied in this Agreement or such other Transaction Document, as applicable, and no Party will be bound by or liable for any alleged representation, promise, inducement or statement of intention not so embodied.

Section 9.3 Amendment and Waiver. This Agreement may be amended, modified, superseded or canceled, and any of its provisions may be waived, only by a written instrument executed by the Parties or, in the case of a waiver, by the Party waiving compliance. The failure of a Party at any time to require performance of any provision of this Agreement will in no manner affect the right of that Party at a later time to enforce such provision. No waiver by a Party of any provision of this Agreement or the breach of any provision of this Agreement, in any one or more instances, will be deemed to be or construed as a further or continuing waiver of such provision or breach, or any other provision of this Agreement.

Section 9.4 Governing Law; Exclusive Jurisdiction. This Agreement and any dispute about which this Agreement is a subject will be governed by and construed in accordance with the applicable Laws of the State of Delaware, without regard to choice of law principles of any jurisdiction. Each of the Parties irrevocably (i) submits itself to the exclusive jurisdiction of the state or federal courts located in Delaware for the purpose of any Proceeding directly or indirectly based upon, relating to or arising out of this Agreement or any of the transactions contemplated hereby or the negotiation, execution or performance hereof or thereof, (ii) agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court and (iii) agrees that it

will not bring any action relating to this Agreement or the transactions contemplated hereby in any court other than the above-named courts. Each of the Parties hereby irrevocably waives, and agrees not to assert, by way of motion, as a defense, counterclaim or otherwise, in any litigation with respect to this Agreement, any claim that it is not personally subject to the jurisdiction of the above-named courts for any reason other than the failure to serve in accordance with this Section 9.4, any claim that it or its property is exempt or immune from jurisdiction of any such court or from any legal process commenced in such courts (whether through service of notice, attachment prior to judgment, attachment in aid of execution of judgment, execution of judgment or otherwise) and, to the fullest extent permitted by the applicable Law, any claim that (A) the suit, action or proceeding in such court is brought in an inconvenient forum, (B) the venue of such suit, action or proceeding is improper or (C) this Agreement, or the subject matter of this Agreement, may not be enforced in or by such courts. Each of the Parties hereby irrevocably consents to service being made through the notice procedures set forth in Section 9.6 below and agrees that service of any process, summons, notice or document by personal delivery to the respective addresses set forth in Section 9.6 below shall be effective service of process for any litigation in connection with this Agreement or the transactions contemplated hereby. Nothing in this Section 9.4 shall affect the right of any Party to serve legal process in any other manner permitted by Law.

Section 9.5 WAIVER OF TRIAL BY JURY. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY THAT MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND THEREFORE EACH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

Section 9.6 Notices. All notices, requests, demands and other communications required or permitted to be given pursuant to this Agreement must be in writing and will be deemed to have been duly given: (a) on the day of delivery, if delivered by hand; (b) on the day of delivery, if sent by facsimile or electronic mail (with confirmation of receipt) at or prior to 5:00 p.m. Eastern Time on a Business Day; (c) on the first Business Day following delivery, if sent by facsimile or electronic mail on a day that is not a Business Day or after 5:00 p.m. Eastern Time on a Business Day; (d) on the first Business Day following deposit with a nationally recognized overnight delivery service; or (e) upon the earlier of actual receipt and the fifth Business Day following first class mailing, with first class, postage prepaid:

If to Buyer:

BAVARIAN NORDIC A/S
Philip Heymans Allé 3
DK-2900 Hellerup
Denmark
Attn: General Counsel, Legal department
Email: [***]

with a copy to (which will not constitute notice):

COOLEY (UK) LLP
22 Bishopsgate
London EC2N 4BQ
United Kingdom
Attention: Michal Berkner
Email: mberkner@cooley.com

If to Sellers:

EMERGENT TRAVEL HEALTH, INC.
EMERGENT INTERNATIONAL, INC.
c/o Emergent BioSolutions, Inc.
400 Professional Drive, 4th Floor
Gaithersburg, MD 20879
Attn: General Counsel
Email: [***]

with a copy to (which will not constitute notice):

BARNES & THORNBURG LLP
11 South Meridian St.
Indianapolis, IN 46204
Attn: Kepten D. Carmichael
Email: kcarmichael@btlaw.com

A Party may change its address, facsimile number or e-mail address by prior written notice to the other Party provided as set forth in this Section 9.6.

Section 9.7 Conflict Between Transaction Documents. This Agreement may be executed by original signature or by facsimile, digital or other electronic signature and in one or more counterparts, each of which will be deemed an original and together will constitute one and the same instrument. The Parties agree and acknowledge that to the extent any terms and provisions of this Agreement are in any way inconsistent with or in conflict with any term, condition or provision of any other agreement, document or instrument contemplated hereby, this Agreement will govern and control.

Section 9.8 Public Disclosure; Confidentiality.

(a) The initial press release to be issued with respect to the transactions contemplated hereby shall be in a form and at a time agreed to by Buyer and Sellers. Notwithstanding anything to the contrary contained in this Agreement (but subject to the last sentence of this Section 9.8(a)), except as may be required (i) to comply with the requirements of any applicable Law (including filings pursuant to the HSR Act) or a Governmental Body or (ii) by any listing agreement with any applicable national securities exchange or market (in which case the parties shall, to the extent legally permitted, consult with each other prior to making any such disclosure and give the other party a reasonable opportunity to comment thereon), from and after the date hereof and prior to Closing, no Party hereto shall, and each such Party shall cause its Representatives not to, make any press release or similar public announcement or communication relating to this Agreement or other Transaction Documents unless specifically consented to in writing in advance by Buyer and Sellers, which consent shall not be unreasonably withheld, conditioned or delayed. If any announcement is to be made pursuant to clause (i) or (ii) in the preceding sentence by any Party hereto,

prior to making such announcement such Party will, to the extent legally permitted, deliver a draft of such announcement to the Other Party and shall give the Other Party a reasonable opportunity to comment thereon. In no event shall the foregoing be construed to restrict or prevent any Party hereto or their respective Affiliates from making any internal announcements to such Party's or its Affiliates' employees regarding the transactions contemplated by this Agreement and the other Transaction Documents, or from disclosing and communicating such information to their respective Representatives, including outside legal counsel, accountants, financial advisors and insurers, in each case on a confidential basis. At any time following the issuance of the initial press release and prior to the Closing, any Party hereto shall be permitted to make any public announcements regarding this Agreement and the transactions contemplated hereby without the prior written consent of any Other Parties to the extent such announcements are consistent in all material respects with such press release or other prior disclosures approved in accordance with this Section 9.8(a).

(b) The Confidentiality Agreement shall continue in full force and effect in accordance with its terms until the Closing, at which time the confidentiality obligations thereunder shall terminate. From and after the date of this Agreement until the Closing, each Party shall, and shall cause each of their respective Affiliates to, keep confidential the terms and existence of this Agreement and the other Transaction Documents and the negotiations relating thereto and all documents and information obtained by a Party from another Party in connection with the transactions contemplated hereby (collectively, the "**Confidential Information**") except (i) to the extent that any Confidential Information must be disclosed to obtain any required regulatory approvals or consents relating to the transactions contemplated by this Agreement or any other Transaction Document, (ii) for disclosures otherwise made in satisfaction of any of the obligations under this Agreement, (iii) to the extent required by applicable Law or as required by any listing agreement with any applicable national securities exchange or market (in which case the Parties shall, to the extent legally permitted, consult with each other prior to making any such disclosure and give the Other Party a reasonable opportunity to comment thereon, (iv) as made public prior to the date of this Agreement by either Party not in violation of this Agreement or any disclosure permitted under Section 9.8(a), and (v) each Party may disclose such information to such Party's Affiliates and their respective Representatives, provided that each such Party, as applicable, shall remain responsible for any disclosure by their respective Representatives or Affiliates

(c) If this Agreement is, for any reason, terminated prior to the Closing, this Section 9.8 and the Confidentiality Agreement shall survive the termination of this Agreement and continue in full force and effect in accordance with the terms hereof. The terms of this Section 9.8 shall survive the consummation of the Closing.

Section 9.9 Expenses. Except as otherwise expressly provided in this Agreement, Sellers and Buyer will each pay all of their own expenses, costs and fees (including legal and other professional fees and costs) incurred in connection with the negotiation, preparation, execution and delivery of this Agreement and the other Transaction Documents and the consummation of the transactions contemplated hereby and thereby (whether the transactions contemplated by this Agreement are consummated or not).

Section 9.10 Headings; Construction. The headings of the articles, sections and paragraphs in this Agreement have been inserted for convenience of reference only and will

not restrict or otherwise modify any of the provisions of this Agreement. Unless otherwise expressly provided, the words "including," "include" or "includes," or other similar words, whenever used in this Agreement will be deemed to be immediately followed by the words "without limitation." The words "herein," "hereby," "hereof," "hereunder" and words of similar import refer to this Agreement as a whole (including any exhibits and schedules hereto) and not merely to any particular section, subsection or paragraph contained in this Agreement. All references in this agreement to Sections, Schedules, Annexes or Exhibits are references to Sections of, and Schedules, Annexes and Exhibits to, this Agreement, unless the context otherwise requires. References in this Agreement to any gender include references to all genders, and references to the singular include references to the plural and vice versa. Neither this Agreement nor any other Transaction Document (nor any uncertainty or ambiguity herein or therein) will be construed against a Party under any rule of construction or otherwise. No Party will be considered the draftsman of this Agreement or any other Transaction Document. The provisions of this Agreement have been negotiated by and chosen by the Parties to express their mutual intent, and no rule of strict construction will be applied against a Party. All references to dollars or "$" in this Agreement or any other Transaction Document are to U.S. Dollars.

Section 9.11 Partial Invalidity. Whenever possible, each provision of this Agreement and each other Transaction Document will be interpreted in such manner as to be effective and valid under applicable Law, but in case any one or more of the provisions contained in this Agreement or other Transaction Document is, for any reason, held by a court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provision of this Agreement or other Transaction Document, as applicable, which will otherwise remain in full force and effect. Upon any such determination that any provision of this Agreement or other Transaction Document is invalid, illegal or unenforceable, the Parties will negotiate in good faith to modify this Agreement or other Transaction Document, as applicable, by replacing the invalid, illegal or unenforceable provisions with legal, valid and enforceable provisions the effect of which comes as close as practicable to the original intent of the Parties in order that the transactions contemplated by this Agreement are consummated as originally contemplated to the greatest extent possible.

Section 9.12 Certain Disclosure Matters.

(a) The Disclosure Schedule contains a series of schedules which, in part, set forth Disclosures specifically referred to in ARTICLE 2 and, in part, provide exceptions, qualifications or limitations to the representations and warranties contained in ARTICLE 2. Any exception, qualification, limitation, fact, event circumstance, contract, document, information, liability, lien, default, breach, violation, impediment, description, summary or other disclosure (each, a "**Disclosure**") made or included for the purpose of any particular section, subsection or clause of any section of the Disclosure Schedule or for the purpose of any particular representation or warranty in the Agreement will, in each case, be deemed made and included for the purpose of (and incorporated by reference in) all other sections, subsections or clauses of the Disclosure Schedule and all other representations and warranties in the Agreement to the extent that a cross-reference is made thereto (either herein or in the Agreement) or to the extent that the applicability or relevance of such Disclosure to any such other sections, subsections or clauses of the Disclosure Schedule or to any such other representations or warranties is reasonably apparent based on: (i) the face of such Disclosure or the face of such representation or warranty (regardless of whether or not specific cross-references are

made); or (ii) the context or subject matter of any section, subsection or clause of the Disclosure Schedule or of any representation or warranty in the Agreement (regardless of whether or not specific cross-references are made).

(b) The information and other Disclosures made, included, summarized, described or discussed in the Disclosure Schedule are provided solely for purposes of making disclosures to Buyer under the Agreement and for no other purpose, and nothing in the Disclosure Schedule is intended to broaden the scope of any representation or warranty contained in the Agreement or to create any covenant. No reference to or inclusion of any Disclosure in the Disclosure Schedule will (nor will it be used by a Party as evidence of): (i) represent (or be deemed or construed to represent) a determination that such Disclosure is material (or otherwise establish a standard or monetary threshold for determining materiality) or that such Disclosure is required to be referred to or included in the Disclosure Schedule; (ii) represent a determination that such Disclosure did not arise in the Ordinary Course of Business; (iii) constitute (or be deemed or construed to be) an admission as to the occurrence or existence of any matter whatsoever concerning such Disclosure, including an admission as to the occurrence or existence of a default, breach or default under any Contract, Permit, Governmental Authorization, plan, policy or other document, or of a violation of any Laws or any Order; or (iv) confer or give to any Person (other than a Party, to the extent expressly contemplated under the Agreement) any remedy, claim, liability, reimbursement, cause of action or other right.

(c) Without limiting the generality of the foregoing, it is expressly understood and acknowledged that: (i) in disclosing the information and other Disclosures made, included, summarized, described or discussed in the Disclosure Schedule, no Seller waives or shall be deemed to waive any attorney-client privilege associated with such information or any protection afforded by the work-product doctrine with respect to thereto; and (ii) all summaries, descriptions or discussions of any Contract, Permit, real or personal property matters, Governmental Authorization, policy or document relating to any other Disclosure item or matter made or included in the Disclosure Schedule are summary in nature, do not purport to be a complete statement of the material terms of, and are qualified in their entirety by reference to, such Contract, Permit, real or personal property matters, Governmental Authorization, policy or document.

Section 9.13 Specific Performance.

(a) The Parties agree that irreparable damage could occur to the non-breaching Party if any provision of this Agreement were not performed by a Party in accordance with the terms hereof. Accordingly, the Parties agree that, subject to the limitations set forth in this Section 9.13, prior to the valid termination of this Agreement pursuant to Section 6.1 above, in addition to any other remedy to which a non-breaching Party is entitled at Law or in equity, the non-breaching Party will be entitled to seek injunctive relief to prevent breaches of this Agreement and will be entitled to specifically enforce the performance of the provisions hereof.

(b) The Parties agree and acknowledge that: (i) by seeking the remedies provided for in this Section 9.13, a Party will not in any respect waive its right to seek any other form of relief that may be available to such Party under this Agreement in the event that this Agreement has been terminated or in the event that the remedies provided for in this Section 9.13 are not available or otherwise are not granted; and (ii) nothing contained in this Section 9.13 will require any Party to institute any

Proceeding for (or limit any Party's right to institute any Proceeding for) specific performance under this Section 9.13 before properly exercising any termination right under ARTICLE 6 (and pursuing any other remedies under this Agreement after such termination) nor will the commencement of any Proceeding pursuant to this Section 9.13 or anything contained in this Section 9.13 restrict or limit any Party's right to properly terminate this Agreement in accordance with the terms of ARTICLE 6 or pursue any other remedies under this Agreement that may be available then or thereafter. Each Party agrees that it will not oppose the granting of an injunction, specific performance, and other equitable relief on the basis that the other Party has an adequate remedy at Law or an award of specific performance is not an appropriate remedy for any reason at Law or equity. Any Party seeking an injunction or injunctions to prevent breaches of this Agreement and to enforce specifically the terms and provisions of this Agreement will not be required to provide any bond or other security in connection with any such order or injunction.

(c) Notwithstanding anything in this Agreement to the contrary, if a party hereto is awarded injunctive relief or specific performance as a result of which the Closing actually occurs, such equitable relief shall be such party's sole and exclusive remedy under this Agreement solely with respect to another party's failure to consummate the Closing. The prevailing party in any Proceeding arising under this Section 9.13(c) shall be entitled to reimbursement of fees, costs and expense.

Section 9.14 Legal Representation and Conflicts Waiver; Non-Assertion of Privilege; Privileged Materials.

(a) **Legal Representation and Conflicts of Interest**. Buyer acknowledges that Barnes & Thornburg LLP and other legal counsel ("**Prior Company Counsel**") have, on or prior to the Closing Date, represented one or more Sellers, the Acquired Companies, their Affiliates, and their respective direct or indirect Representatives (each such Person, other than the Acquired Companies, a "**Designated Person**") in one or more matters relating to this Agreement or any other agreements or transactions contemplated hereby (including any matter that may be related to a litigation, claim or dispute arising under or related to this Agreement or such other agreements or in connection with such transactions) (each, an "**Existing Representation**"), and that, in the event of any post-Closing matters (1) relating to this Agreement or any other agreements or transactions contemplated hereby (including any matter that may be related to a litigation, claim or dispute arising under or related to this Agreement or such other agreements or in connection with such transactions) and (2) in which Buyer or any of its Affiliates (including, post-Closing, the Acquired Companies), on the one hand, and one or more Designated Persons, on the other hand, are or may be adverse to each other (each, a "**Post-Closing Matter**"), the Designated Persons reasonably anticipate that Prior Company Counsel will represent them in connection with such matters. Accordingly, Buyer (on its own behalf and on behalf of its Affiliates, including the Acquired Companies after the Closing) (i) waives and shall not assert, and agrees after the Closing to cause its Affiliates to waive and to not assert, any conflict of interest arising out of or relating to the representation by one or more Prior Company Counsel of one or more Designated Persons in connection with one or more Post-Closing Matters (the "**Post-Closing Representation**"), and (ii) agrees that, in the event that a Post-Closing Matter arises, Prior Company Counsel may represent one or more Designated Persons in a Post-Closing Matter even though the interests of such Person(s) may be directly adverse to Buyer, the Acquired Companies or any of their Affiliates, and even though

Prior Company Counsel may (A) have represented the Acquired Companies in a matter substantially related to such dispute or (B) be currently representing Buyer, an Acquired Company or any other of their Affiliates. Without limiting the foregoing, Buyer (on its own behalf and on behalf of its Affiliates, including the Acquired Companies after the Closing) consents to the disclosure by Prior Company Counsel, in connection with one or more Post-Closing Representations, to the Designated Persons of any information learned by Prior Company Counsel in the course of one or more Existing Representations, whether or not such information is subject to the attorney-client privilege of the an Acquired Company and/or Prior Company Counsel's duty of confidentiality as to such Acquired Company and whether or not such disclosure is made before or after the Closing.

(b) **Non-Asserting of Privileges**. Buyer (on its own behalf and on behalf of its Affiliates, including the Acquired Companies after the Closing) waives and shall not assert, and agrees after the Closing to cause its Affiliates to waive and to not assert, any attorney-client privilege, attorney work-product protection or expectation of client confidence with respect to any communication between any Prior Company Counsel, on the one hand, and any Designated Person or an Acquired Company (collectively, the "**Pre-Closing Designated Persons**"), on the other hand, or any advice given to any Pre-Closing Designated Person by any Prior Company Counsel, occurring during one or more Existing Representations (collectively, "**Pre-Closing Privileges**") in connection with any Post-Closing Representation, including in connection with a dispute between any Designated Person and one or more of Buyer or any of its Affiliates, it being the intention of the Parties that all rights to such Pre-Closing Privileges, and all rights to waive or otherwise control such Pre-Closing Privilege, shall be retained by such Designated Persons and asserted by Sellers on their behalf, and shall not pass to or be claimed or used by Buyer or any of its Affiliates, except as provided in the last sentence of this Section 9.14(b). Furthermore, Buyer (on its own behalf and on behalf of its Affiliates, including the Acquired Companies after the Closing) acknowledges and agrees that any advice given to or communication with any of the Designated Persons shall not be subject to any joint privilege (whether or not the Acquired Companies also received such advice or communication) and shall be owned solely by such Designated Persons.

Section 9.15 No Obligation or Liability of Non-Parties. This Agreement may only be enforced against, and any claim or cause of action based upon, arising out of, or related to this Agreement, the other Transaction Documents or the transactions contemplated hereby or thereby may only be brought against, the entities that are expressly named as parties on the signature page hereto and thereto ("**Express Parties**") and then only with respect to the specific obligations set forth herein and therein with respect to such Express Party. Except to the extent an Express Party (and then only to the extent of the specific obligations undertaken by such Express Party and not otherwise), no past, present or future director, manager, officer, employee, incorporator, member, partner, stockholder or other direct or indirect equity holder, Affiliate or agent, attorney, advisor or Representative of any such Person or any of its or their Affiliates (collectively, "**Non-Recourse Parties**" and each, individually, a "**Non-Recourse Party**") shall have any Liability (whether in contract, tort, equity, based upon fraud or any other theory that seeks to impose liability of any Person against or on any Non-Recourse Party, or otherwise) for any one or more of the representations, warranties, covenants, agreements, undertakings or other obligations or Liabilities of either Seller or Buyer under this Agreement or any other Transaction Document (whether for indemnification or otherwise) of or for any claim based on, arising out of, or related to this

Agreement, any other Transaction Document or the transactions contemplated hereby or thereby and, in furtherance and not in limitation of the foregoing, each Party hereby expressly and specifically irrevocably and unconditionally waives, releases and forever discharges any and all such Liabilities, claims and obligations of any kind, type or nature whatsoever against (and any and all rights, remedies and recourse that any such Party may otherwise be entitled to assert, exercise or obtain from) any such Non-Recourse Parties, whether existing now, in the past or in the future.

Section 9.16 Relationship of Parties; No Duties. Nothing in this Agreement shall be deemed to constitute the Parties as joint venturers, alter egos, partners or participants in an unincorporated business or other separate entity, nor, except as expressly and specifically set forth herein, in any manner create any principal agent, fiduciary or other special relationship between the Parties. No Party shall have any duties (including fiduciary duties) towards any other Party except as specifically set forth herein.

Section 9.17 Counterparts. This Agreement may be executed by original signature or by facsimile, digital or other electronic signature and in one or more counterparts, each of which will be deemed an original and together will constitute one and the same instrument.

[*counterpart signature pages follow*]

* * * * *

IN WITNESS WHEREOF, each of the undersigned Parties have executed this Agreement as of the date first written above.

Buyer:

BAVARIAN NORDIC A/S

By: _____
Name: Paul Chaplin
Title: President and CEO

IN WITNESS WHEREOF, each of the undersigned Parties have executed this Agreement as of the date first written above.

EII:

EMERGENT INTERNATIONAL, INC.

By: _____
Name: Richard S. Lindahl
Title: Treasurer

ETHI:

EMERGENT TRAVEL HEALTH, INC.

By: _____
Name: Richard S. Lindahl
Title: Treasurer

Exhibit C

Form of Transition Services Agreement

[*See attached*]

Exhibit C

FORM OF TRANSITION SERVICES AGREEMENT

THIS TRANSITION SERVICES AGREEMENT (this "**Agreement**"), dated as of [•]. 2023 (the "**Effective Date**"), is entered into by and among BAVARIAN NORDIC A/S, a private limited liability company organized under the laws of Denmark ("**Buyer**"), EMERGENT INTERNATIONAL INC., a Delaware corporation ("**EII**"), and EMERGENT TRAVEL HEALTH INC., a Delaware corporation ("**ETHI**," and together with EII, the "**Sellers**," and each individually, a "**Seller**"). Each of Buyer and Sellers are sometimes referred to individually herein as a "**Party**" and collectively as the "**Parties**."

Background Statement

A. Buyer and Sellers have entered into that certain Purchase and Sale Agreement, dated as of February [15], 2023, by and among Buyer and Sellers (the "**Purchase Agreement**"), pursuant to which (i) Buyer has agreed to purchase from EII and EII has agreed to sell to Buyer the Shares, and (ii) Buyer has agreed to purchase from ETHI and its Affiliates, and ETHI has agreed to sell and cause the sale of the Purchased Assets to Buyer, all as more fully described in the Purchase Agreement. Capitalized terms used but not otherwise defined in this Agreement shall have the meaning ascribed to such terms in the Purchase Agreement.

B. To ensure an orderly transition of the Business to Buyer and to facilitate Sellers' uninterrupted operation of their respective businesses other than the Business, (i) Sellers have agreed to provide certain transition services to Buyer, and (ii) Buyer has agreed to provide certain transition services to Sellers, pursuant to the terms and conditions of this Agreement.

C. As a condition to consummating the transactions contemplated by the Purchase Agreement, the Parties have agreed to enter into this Agreement to document the scope of such transition services and the terms and conditions pertaining to such services.

NOW, THEREFORE, in consideration of the foregoing, and the respective representations, warranties, covenants and agreements set forth in this Agreement, the Parties, intending to be legally bound, hereby agree as follows:

Article 1
Services Provided

Section 1.01 Transition Services.

(a) **Seller Transition Services**. Upon the terms and subject to the conditions set forth in this Agreement, Sellers will provide, or cause to be provided, to Buyer, for the purpose of transitioning the Business to Buyer (the "**Buyer Purpose**"), each of the services to be provided or procured by the Seller under this Agreement, including all services listed in Appendix A, which is attached to and made part of this Agreement, (each such service is referred to individually as a "**Seller Transition Service**", and collectively as the "**Seller Transition Services**"), during the time period for each Seller

Transition Service set forth on Appendix A (hereinafter referred to as the "**Seller Service Time Periods**").

(b) **Buyer Transition Services**. Upon the terms and subject to the conditions set forth in this Agreement, Buyer will provide, or cause to be provided, to Sellers for the purpose of transitioning to Sellers certain assets and operations unrelated the Business (the "**Seller Purpose**"), each of the services to be provided or procured by the Seller under this Agreement, including all services listed in Appendix B, which is attached to and made part of this Agreement (each such service described thereon is referred to individually as a "**Buyer Transition Service**", and collectively as the "**Buyer Transition Services**"), during the time period for each Buyer Transition Service set forth on Appendix B (hereinafter referred to as the "**Buyer Service Time Periods**").

(c) **Certain Definitions**. For the purposes of this Agreement: (i) a Seller Transition Service and/or a Buyer Transition Service may sometimes be referred to herein as a "**Transition Service**;" (ii) the Seller Service Time Periods and/or the Buyer Service Time Periods may sometimes be referred to herein as the "**Time Periods**," (iii) the Party that provides a Transition Services to the other Party is referred to herein as a "**Service Provider**;" (iv) the Party that receives a Transition Services provided by the other Party is referred to herein as a "**Service Recipient**", and (v) "**Confidential Information**" of a Party, means all information provided and/or disclosed (including in written form, electronic form or otherwise) by, or on behalf of, such Party or its Affiliates, agents or representatives to one or more of the other Parties, their Affiliates, agents or representatives in connection with this Agreement, including, technical, scientific, regulatory and other information, results, knowledge, techniques, data, analyses, inventions, invention disclosures, plans, processes, methods, know-how, ideas, concepts, test data (including pharmacological, toxicological and clinical test data), analytical and quality control data, formulae, specifications, marketing, pricing, distribution, cost, sales, and manufacturing data and descriptions. In addition, the terms and conditions of this Agreement shall be deemed to be Confidential Information of the Parties jointly.

Section 1.02 Level of Transition Services. The Service Provider shall perform the Transition Services exercising the same degree of care as the Service Provider exercises or exercised in performing the same or similar services for its own account or for the account of any of its Affiliates, with priority reasonably equivalent to that provided to its own businesses. Furthermore, the Service Provider represents, warrants and agrees that the Transition Services shall be provided in good faith, in accordance with all applicable Laws and in a manner generally consistent with the historical provision of the services and with the same standard of care as historically provided. The Service Provider agrees to make available to the Service Recipient on a timely basis all information and materials reasonably requested by the Service Recipient to the extent necessary or reasonably useful for the purposes of receiving the benefit of the Transition Services, shall ensure that it has all equipment, resources, permits, approvals, licenses and qualified personnel necessary to perform the Transition Services and shall assign sufficient resources and qualified personnel as are reasonably required to perform the Transition Services in accordance with the standards set forth in this Section 1.02. The Service Provider shall not subcontract the performance of any Transition Services to any Person other than the Service Provider's Affiliates without the prior written consent of the Service Recipient.

Section 1.03 No Obligation to Continue to Use Transition Services. The Service Recipient shall have no obligation to continue to use any of the Transition Services and the Service Recipient may terminate any Transition Service by giving the Service Provider written notice of its desire to terminate any or all such Transition Services or any portion thereof pursuant to Section 6.02 below.

Section 1.04 Omitted Services. If, at any time during the term of this Agreement, the Buyer becomes aware of any service that is reasonably required to ensure a smooth transition of the Business to the Buyer but which is not then a Seller Transition Service (each, an "**Omitted Service**"), the Buyer shall promptly request such Omitted Service from the Sellers, and the Sellers shall consider such request in good faith and shall not unreasonably refuse to provide such Omitted Service. Upon the mutual written agreement of the Parties, acting reasonably, regarding such Omitted Services, including the description, scope, and duration of such services, and the terms and conditions of providing those services (including the fees therefore), the Sellers shall thereafter provide or cause to be provided to the Buyer such Omitted Service and such Omitted Service shall be deemed part of the Seller Transition Services.

Section 1.05 Project Managers. Each Party will appoint a project manager, who shall be responsible for all day-to-day matters arising hereunder, and who shall be the primary contact for the other Party for any issues arising hereunder (each, a "**Project Manager**"). The Project Managers shall meet, electronically or by telephone, at the request of either Project Manager, in order to ensure the provision of the Transition Services in accordance with the terms hereof, as well as the orderly transition of those Transition Services at the end of the applicable Time Periods. Buyer's initial Project Manager shall be [•][1] and Sellers' initial Project Manager shall be [•].[2] Each Party may change its designated Project Manager upon [***] prior written notice to the other Party. The Project Managers' shall seek to mutually resolve operational issues with respect to the provision the Transition Services under this Agreement in good faith, provided such good faith efforts shall not prevent a Party hereto from exercising its enforcement rights. If any dispute or difference is not resolved within [***] of the Project Managers first meeting to discuss such issue, such dispute shall be referred to and discussed by the CEO, a senior vice president with decision-making authority, or other designee, of each Party (the "**Senior Officers**"). If the Senior Officers are unable to resolve the matter within [***], either Party seeking final resolution of such dispute shall refer the dispute for resolution in accordance with Section 9.05.

Section 1.06 Independent Contractors. The Service Providers are and will remain independent contractors of the Service Recipients with respect to the performance of the Transition Services under this Agreement. Neither the Service Provider nor any employee or agent of the Service Provider will be considered an employee or agent of the Service Recipient for any purpose. Neither Party, nor its employees, will have any authority to bind or make commitments on behalf of the other Party, nor will it or they hold themselves out as having such authority.

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[1] **Note to Draft**: *To be determined.*

[2] **Note to Draft**: *To be determined.*

Article 2
Consideration

Section 2.01 Responsibility for Wages and Fees. For such time as any employees of a Service Provider or any third party professional employer organization with whom such Service Provider is contracted ("**Employees**") are providing the Transition Services to a Service Recipient under this Agreement, (a) such Employees will remain employees of the applicable Service Provider and shall not be deemed to be employees of the Service Recipient for any purpose, and (b) the Service Provider shall be solely responsible for the payment and provision of all wages, bonuses and commissions, employee benefits, including severance and worker's compensation, and the withholding and payment of applicable Taxes relating to such Employees.

Section 2.02 Transition Services Fees. As consideration for providing the Transition Services hereunder, (a) Buyer will pay to Sellers the applicable charges indicated in Appendix A in respect of each Seller Transition Service category or subcategory as listed therein (the "**Buyer Service Fees**"), and (b) Sellers will pay to Buyer the applicable charges indicated in Appendix B in respect of each Buyer Transition Service category or subcategory as listed therein (the "**Seller Service Fees**"). (The Buyer Service Fees and/or the Seller Service Fees may sometimes be referred to herein as the "**Service Fees**.") In addition to the Service Fees, the applicable Service Recipient shall reimburse the applicable Service Provider for all reasonable and documented out-of-pocket costs and expenses which have been agreed by the Parties in writing and which have been incurred to a third party by the Service Provider or its Affiliates in connection with providing the Transition Services (including necessary travel-related expenses) (the "**Service-Related Expenses**"). Notwithstanding the foregoing, in the event that the aggregate cost of all Buyer Service Fees and all Service-Related Expenses incurred by Seller, but excluding any costs payable to [***] in respect of distribution services, reaches [***] , the Parties shall promptly discuss in good faith what services are still required to be performed, how long such services are required for, what the estimated cost of such outstanding services is, and whether there are any steps that can be taken to minimize or otherwise limit such outstanding costs; *provided*, *however,* for purposes of clarity, under no circumstance shall Sellers be obligated to provide any Seller Transition Services to Buyer without Buyer's agreement to pay Sellers mutually agreed-upon Services Fees in respect thereof.

Section 2.03 Invoices and Payment.

(a) The Service Provider shall provide the Service Recipient with monthly invoices (the "**Invoices**") with respect to the Service Fees and Service-Related Expenses for the Transition Services performed or incurred during the immediately preceding month, which Invoices shall set forth in reasonable detail, with such supporting documentation as the Service Recipient may reasonably request, including documentary evidence of all Service-Related Expenses, the category into which each such individual providing the applicable service falls based on the categories set out in Appendix C, and the number of hours each such individual dedicated to the services during the applicable period. The Service Recipient shall pay to the Service Provider all Service Fees and Service-Related Expenses detailed on each Invoice within [***] following the Service Recipient's receipt of such Invoice.

(b) In the event of an Invoice dispute, the Service Recipient shall deliver a written statement to the Service Provider no later than fifteen (15) days prior to the date

payment is due on the disputed Invoice listing all disputed items and providing a reasonably detailed description of each disputed item. Amounts not so disputed shall be deemed accepted and shall be paid, notwithstanding disputes on other items, within the period set forth in Section 2.03(a). The Parties shall seek to resolve all such disputes expeditiously and in good faith. The Service Provider shall continue performing the Services in accordance with this Agreement pending resolution of any dispute.

Section 2.04 Taxes. The Service Recipient will be responsible for all sales or use Taxes imposed or assessed as a result of the provision of Transition Services, if any. If the Service Provider pays any such Taxes on behalf of the Service Recipient, the Service Provider shall deliver an Invoice to the Service Recipient for the amount of such Taxes, and the Service Recipient shall pay such Invoice in accordance with Section 2.03(a).

Section 2.05 Records. The Service Provider shall retain all paper and electronic records pertaining to the performance of the Transition Services performed by or on behalf of such Service Provider (the "**Records**") for [***] from the earlier of completion of the relevant Transition Service or obligation, or early termination of this Agreement, unless the Parties agree to a longer period of time (the "**Retention Period**"). The Service Provider will make available the Records to the Service Recipient after the expiry of the Retention Period, provided that the Service Provider shall be entitled to keep a copy of all Records for its own compliance and record keeping purposes.

Section 2.06 Audit Rights. The Service Recipient and its accountants and other Representatives shall have the right to inspect, at reasonable times and upon prior notice, at the Service Recipient's cost, the Service Provider's Records pertaining to and containing information concerning the Invoices, Service Fees, Service-Related Expenses in order to verify the amounts thereof.

Article 3
Transfer of Product Registrations and Regulatory Documentation

Section 3.01 Transfer Plan. The Parties, shall, acting reasonably and using all reasonable efforts, agree a written plan ("**Transfer Plan**") as soon as possible, and in any event within ten (10) Business Days of Closing. The Transfer Plan shall include:

(a) details of which markets and for which Products Sellers and Buyer will distribute the Products in during the Distribution Period;

(b) the steps to be taken by the relevant Registration Holder and Registration Transferee to effect the Registration Transfer and a timetable setting out the timelines for the steps to complete the Registration Transfer shall occur by.

Section 3.02 Product Registration Transfer. Sellers and Buyer hereby agree that following Closing, they will each use, and shall procure that their Affiliates use, commercially reasonable efforts to ensure that, as soon as reasonably practicable, or if later on the date requested by Buyer:

(a) Subject to Section 3.02(b), each Product Registration shall be transferred in accordance with applicable Laws by Sellers or the relevant Affiliate holding such Product Registration (the "**Registration Holder**") to Buyer or its nominated Affiliate, or where neither Buyer nor its Affiliates satisfies the requirements under applicable Laws to

be transferred the relevant Product Registration, such third party as is nominated by Buyer, in either case to whom the relevant Product Registration is to be transferred (as designated by Buyer) (the "**Registration Transferee**") (and such transfer, the "**Registration Transfer**"), unless Buyer has expressly requested in writing that one or more Product Registrations be cancelled, in which case such requested Product Registrations shall not be transferred pursuant to this Article 3 and instead such Product Registrations shall be cancelled by Sellers, at Buyer's cost provided that all such costs are pre-approved by Buyer in writing, as soon as possible after receipt of Buyer's notice informing Sellers of such request.

(b) Where applicable Laws do not permit Registration Transfer, a new Product Registration for the applicable Transferred Product shall be registered in the applicable country or jurisdiction in the name of the Registration Transferee to replace the existing Product Registration (a "**Re-registration**") and Sellers shall procure that the relevant Registration Holder takes all necessary steps to withdraw, abandon, cancel or allow to lapse the superseded Product Registration as soon as practicable after the Re-registration has been completed;

(c) On a Product Registration-by-Product Registration basis, from Closing until the date on which the applicable Registration Transfer or Re-registration is approved, or deemed approved, by the applicable Governmental Body (the "**Transfer Date**" and the period from Closing to the Transfer Date the "**Interim Period**"), Sellers shall hold the benefit of each Product Registration on behalf of Buyer. Sellers shall maintain in force, and comply with the terms of, each Product Registration until the Transfer Date, including paying all maintenance fees and renewal costs, and Buyer shall promptly reimburse Sellers for all such reasonably incurred fees and costs. During the Interim Period, Sellers shall not voluntarily amend, cancel or surrender the Product Registrations or take any step in relation thereto unless requested to do so in writing by Buyer or required to do so by applicable Law. Buyer will be responsible for preparing and submitting, all notices, applications, submissions, reports and any other instruments, documents, correspondence or filings relating to the Product Registrations ("**Registration Documentation**"). Sellers shall cooperate with and provide reasonable assistance to Buyer to enable it to prepare such Registration Documentation, including by providing all information reasonably required by Buyer and in the possession of Sellers or their Affiliates. Where any Registration Documentation is required to be submitted by Sellers or any of their Affiliates, or to be signed or executed by Sellers or any of their Affiliates, Buyer shall provide such Registration Documentation to Sellers as soon as reasonably practicable and Seller shall submit, or cause the submission, of such Registration Documentation to the relevant Governmental Body as soon as possible, or promptly execute, or cause the execution of, such Registration Documentation. Sellers shall comply with all applicable Law applicable to the holder of the Product Registration. Buyer shall, in connection with its marketing, sale, promotion and distribution of the Products during the Interim Period and otherwise to the extent that any activity applicable to the holder of the Product Registration is expressly delegated in writing to it hereunder, comply with all applicable Law applicable to that activity.

(d) Promptly after Closing, and in any event within five (5) Business Days, Sellers shall deliver to the Buyer a letter (the "**Confirmation Letter**"), from each

Registration Holder, providing complete details of the Registration Holder, confirming the completion of the sale and purchase of the Business and setting out the Product Registrations in the name of such Registration Holder to be transferred to Buyer, which Buyer may submit to the relevant Governmental Body where required in order to effect any Registration Transfer or Re-registration. Each Confirmation Letter shall be duly executed by the applicable Registration Holder. In the event that any legalization formalities, for example notarization, or wording changes to the Confirmation Letter are required in any or all jurisdictions in order for the Confirmation Letter to be accepted by the applicable Governmental Body, Sellers shall procure that the applicable Registration Holder(s) promptly comply with all such formalities or wording changes and issue an updated compliant Confirmation Letter to Buyer.

(e) Sellers shall, and shall procure that their Affiliates shall, transfer to Buyer each Global Safety Database for the Products promptly following Closing. The "**Global Safety Database**" means each of the Sellers' safety database used as the reference for regulatory safety and pharmacovigilance purposes, to the extent it relates to the Products, and which includes, for clarity, all safety reports in respect of Products generated prior to the date of transfer of such database, whether generated by or on behalf of Sellers or any Affiliate or any third party. With effect from the date of the transfer of the Global Safety Database:

(i) Sellers shall be entitled to retain a copy of each Global Safety Database that exists as at the date on which it is transferred to Buyer provided always that Sellers and their Affiliates shall have access to data which is necessary to enable Sellers and their Affiliates to comply with applicable Laws or a requirement of a Governmental Body as the foregoing relate to Products but for no other purpose; and

(ii) Sellers shall not have direct access to the Global Safety Database held by Buyer but Buyer shall provide, on request from Sellers, data which is necessary to enable Sellers to comply with applicable Laws, provided such data is in Buyer's possession and control.

(f) If requested by Buyer, the Parties shall, acting reasonably and in good faith, promptly seek to agree and execute a Safety Data Exchange Agreement and/or Quality Agreement.

(g) For the duration of the Interim Period, Sellers hereby appoint Buyer as the exclusive distributor of the Products in all territories worldwide.

Article 4
Confidentiality

Section 4.01 Confidentiality. Except to the extent expressly authorized by this Agreement or otherwise agreed in writing by the Parties, each Party (each, a "**Receiving Party**") agrees that during the term of this Agreement and for the seven (7) year period thereafter, it will keep confidential and will not publish or otherwise disclose and will not use for any purpose other than as provided for in this Agreement (which includes the exercise of any rights or the performance of any obligations hereunder or thereunder) any Confidential Information furnished to it by or on behalf of any other Party (each, a "**Disclosing Party**") or its Affiliates in

connection with this Agreement. The foregoing obligations will not apply to any portion of such information or materials that the Receiving Party can demonstrate:

(a) was publicly disclosed by the Disclosing Party before or after such Confidential Information becomes known to the Receiving Party;

(b) was already known to the Receiving Party or any of its Affiliates, other than under an obligation of confidentiality or non-use, prior to when it was received from the Disclosing Party;

(c) is subsequently disclosed to the Receiving Party or any of its Affiliates by a third party lawfully in possession thereof without obligation to keep such Confidential Information confidential;

(d) has been published by a third party or otherwise enters the public domain through no fault of the Receiving Party or any of its Affiliates in breach of this Agreement; or

(e) has been independently developed by the Receiving Party or any of its Affiliates, without the aid, application or use of any Confidential Information of any other Party.

Section 4.02 Authorized Disclosure. The Receiving Party may disclose Confidential Information belonging to the Disclosing Party to the extent such disclosure is reasonably necessary for complying with applicable Laws, including regulations promulgated by securities exchanges and any court orders, provided that such Receiving Party promptly notifies the Disclosing Party in writing prior to making any such disclosure and cooperates with the Disclosing Party's efforts to seek confidential treatment or to otherwise limit disclosure. Each Receiving Party may disclose the Disclosing Party's Confidential Information to its Affiliates, employees, agents, advisors, and independent contractors engaged by such Receiving Party, in each case (a) only to the extent such Persons need to know the Confidential Information solely in connection with the performance of this Agreement, and (b) *provided* that each Person receiving Confidential Information must be bound by obligations of confidentiality and non-use at least as stringent, and equivalent in scope, to those set forth in this Article 4 prior to any such disclosure and such Receiving Party shall be liable to the Disclosing Party for any breach of such obligations by the Person to whom the Confidential Information was disclosed. Each Receiving Party may also disclose Confidential Information of the Disclosing Party, including the material terms of this Agreement, or provide a copy of any such agreement or a summary of such Party's findings during any due diligence investigation, in connection with any actual or potential collaboration, investment, acquisition or licensing transaction to any bona fide potential or actual collaborator, investor, investment banker, acquirer, provider of debt or royalty financing, licensee or any potential or actual financial partner without consent of the other Party, and provided that in connection with such disclosure, each Person to whom such Confidential Information is disclosed must be bound by obligations of confidentiality and non-use at least as stringent, and equivalent in scope, to those set forth in this Article 4 prior to any such disclosure and the Receiving Party making such disclosure to such recipient shall be liable to the Disclosing Party for any breach of such obligations by such recipient. In any event, each Party agrees to take all reasonable action to avoid unauthorized use or disclosure of Confidential Information of another Party hereunder. In the event of any conflict between the terms of this Article 4, and the Confidentiality Agreement, the terms of Confidentiality Agreement shall prevail.

Article 5
Intellectual Property Rights

Section 5.01 Background IP. Each Party shall retain all right, title and interest in and to any Intellectual Property Rights owned or controlled by such Party as of the date of this Agreement, or developed by or on behalf of such Party during the term of this Agreement independently of this Agreement ("**Background IP**"). For the avoidance of doubt, the Intellectual Property Rights in the Purchased Assets are the Background IP of Buyer.

Section 5.02 Arising IP. Buyer shall own all right, title and interest in and to all Intellectual Property Rights, deliverables, records, documents and work product arising from the performance of the Seller Transition Services ("**Buyer Arising IP**"), and the Buyer Arising IP shall be the Confidential Information of Buyer. Sellers shall own all right, title and interest in and to all Intellectual Property Rights, deliverables, records, documents and work product arising directly from the performance of the Buyer Transition Services ("**Seller Arising IP**" and, together with the Buyer Arising IP, the "**Arising IP**"), and the Seller Arising IP shall be the Confidential Information of Sellers. Buyer hereby assigns its rights, title and interest in and to the Seller Arising IP to Sellers and Sellers hereby assigns its rights, title and interest in and to the Buyer Arising IP to Buyer.

Section 5.03 License to Perform the Transition Services. The Service Recipient hereby grants the Service Provider a non-exclusive, royalty-free, fully paid-up, worldwide license, with the right to sublicense solely to those of Service Provider's, Affiliates, agents or subcontractors appointed to conduct the applicable Transition Services in accordance with this Agreement, under the Service Recipient's Background IP and the Arising IP solely for the purposes of conducting the applicable Transition Services.

Section 5.04 License to use the Acquired Company Names. Sellers hereby grant, on behalf of Sellers and their Affiliates, a non-exclusive, fully paid-up, license to use the company names Emergent BioSolutions Berna GmbH, Emergent Italy S.r.l., Emergent BioSolutions Spain S.L., and Emergent BioSolutions Portugal, Lda. including any stylization or logos used with such company names (the "**Company Names**") solely for the limited purpose of allowing the Acquired Companies, the Buyer, its Affiliates and their respective service providers to use the Company Names on a transitional basis, in order that the Acquired Companies can continue to operate and trade in the Ordinary Course of Business, provided that the Buyer shall use its commercially reasonable efforts to end all use of the name "Emergent", and to change the name of any Acquired Company that on Closing, uses the name "Emergent", as soon as reasonably practicable after Closing. Nothing herein shall provide any right to use Emergent as a trademark to designate Buyer or Buyer's products and materials, except as already approved by Sellers as expressly permitted in Section 5.05.

Section 5.05 License to Exploit the Inventory. Sellers hereby grant, on behalf of Sellers and their Affiliates, a non-exclusive, fully paid-up, license to use certain trademarks, trade names, trade dress and copyrighted material displayed on the Transferring Inventory, including the right to use any advertising, promotional and training materials comprised in the Transferring Inventory, owned or controlled by Sellers and their Affiliates only in the existing manner that those certain trademarks, trade dress, trade names, and copyrighted material are displayed on the Transferring Inventory as of the Closing Date, (1) for the purpose of selling off the Transferring Inventory, without any changes to the Transferring Inventory ("**Transferring**

Inventory License"), and (2) for the purpose of reproducing existing packaging, labeling, advertising, promotional and training materials comprised in the Transferring Inventory, without any changes to such materials ("**Reprint License**"). In either case (1) or (2), such license shall include the right to include the entity name of any Acquired Company, as may change from time to time, on such Transferring Inventory or in such packaging, labeling, advertising, promotional and/or training materials, and (ii) such licenses shall be sublicensable to service providers acting on behalf of any of the Acquired Companies, the Buyer of its Affiliates. The Transferring Inventory License shall terminate once the stock of Transferring Inventory has been exhausted. The Reprint License shall terminate on January 31, 2024.

Article 6
Term and Termination

Section 6.01 Term. Except as otherwise provided in this Article 6 or as otherwise agreed in writing by the Parties, this Agreement shall become effective as of the date hereof and the Transition Services hereunder shall continue to be performed until the first to occur of (a) the applicable termination date, or expiration of the applicable Time Period, for any particular Transition Service as set forth in Appendix A or Appendix B hereto, unless extended pursuant to Appendix A, or (b) the date of effective termination of any particular Transition Service upon delivery of notice of termination by the Service Recipient to the Service Provider pursuant to Section 6.02 hereof. This Agreement shall terminate in its entirety on the date upon which no Party has any continuing obligation under this Agreement to perform any Transition Services.

Section 6.02 Termination by the Service Recipient. The Service Recipient may terminate any applicable Transition Service category or subcategory indicted in Appendix A or Appendix B, as applicable, with or without cause upon ten (10) days written notice to the applicable Service Provider; *provided*, *however*, to the extent that the applicable Service Providers' ability to provide (or cause to be provided) a Transition Service category or subcategory is actually and materially dependent on the continuation of another Transition Service category or subcategory, the Service Provider will notify the Service Recipient and the Parties will discuss such dependency. If the Service Recipient determines to move forward with the termination despite the dependency, the Service Providers' obligation to provide (or to cause to be provided) such dependent Transition Service category or subcategory shall also terminate with the termination of such supporting Transition Service category or subcategory to the extent of such dependency.

Section 6.03 Effect of Termination. Upon termination or expiration of any or all Transition Services pursuant to this Agreement, or upon the termination of this Agreement in its entirety pursuant to this Article 6, the applicable Service Provider shall have no further obligation to provide the applicable terminated Transition Services and the applicable Service Recipient will have no obligation to pay any future Service Fees or to reimburse any future Service-Related Expenses relating to such Transition Services (other than for or in respect of (a) Transition Services already provided in accordance with the terms of this Agreement and received by the applicable Service Recipient prior to effective date of such termination, and (b) any reasonable and unavoidable fees or expenses payable to any unaffiliated third party provider as a result of any such termination).

Section 6.04 Survival of Certain Obligations. Without prejudice to the survival of the other agreements of the Parties, the following obligations shall survive the termination of this Agreement: Article 2 (to the extent any Service Fees and Service-Related Expenses that have not yet been paid), this Article 6, Section 7.03, Article 8, and Article 9.

Article 7
Indemnification

Section 7.01 Indemnification. The Service Provider shall indemnify, defend and hold harmless the Service Recipient, its shareholder(s), members, director(s), managers, officers, employees, agents, Affiliates, successors, assigns and Representatives (collectively, the "**Service Recipient Indemnified Parties**") from and against any and all Adverse Consequences of the Service Recipient Indemnified Parties relating to, arising out of or resulting from any breach of this Agreement or the gross negligence, reckless or willful misconduct, bad faith or violation of applicable Laws on the part of the Service Provider in connection with the provision of, or failure to provide, any applicable Transition Services to the Service Recipient.

Section 7.02 Indemnification Procedures. The procedures set forth in Section 7.4 of the Purchase Agreement shall be deemed incorporated into, and made a part of, this Agreement, *mutatis mutandis*.

Section 7.03 Term of Indemnification. Any indemnification obligation contained in this Article 7 shall survive for a period of [***] after the provision of the applicable Transition Services that gives rise to such indemnification obligation.

Article 8
Limitation of Liability

NEITHER A SERVICE PROVIDER, ON THE ONE HAND, NOR A SERVICE RECIPIENT, ON THE OTHER HAND, WILL BE LIABLE TO THE OTHER FOR ANY CONSEQUENTIAL, INDIRECT OR PUNITIVE OR EXEMPLARY DAMAGES OF ANY KIND OR CHARACTER, INCLUDING, BUT NOT LIMITED TO, LOSS OF USE, LOSS OF PROFIT, OR LOSS OF REVENUE, AND NO CLAIM WILL BE MADE BY EITHER A SERVICE PROVIDER OR A SERVICE RECIPIENT AGAINST THE OTHER FOR SUCH DAMAGES WHETHER SUCH CLAIM IS BASED OR CLAIMED TO BE BASED ON SOLE, JOINT, CONCURRENT, ACTIVE OR PASSIVE, NEGLIGENCE, FAULT, BREACH OF WARRANTY, BREACH OF AGREEMENT, STATUTE, STRICT LIABILITY OR OTHERWISE. MOREOVER, (I) BUYER'S CUMULATIVE AGGREGATE LIABILITY FOR: (A) ALL CLAIMS ARISING FROM, RELATING TO, OR WHICH ARISE IN CONNECTION WITH A BUYER BREACH OF ITS OBLIGATIONS UNDER, ARTICLE 3 OR A CLAIM BY A THIRD PARTY WHICH IS SUBJECT TO INDEMNIFICATION BY BUYER PURSUANT TO ARTICLE 7 (EACH A "**BUYER FUNDAMENTAL BREACH**") WILL NOT EXCEED IN AGGREGATE [***] , AND (B) ALL OTHER CLAIMS ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT OTHER THAN A BUYER FUNDAMENTAL BREACH WILL NOT EXCEED THE GREATER OF [***] OR [***] , AND (II) SELLERS' COLLECTIVE CUMULATIVE AGGREGATE LIABILITY FOR: (X) ALL CLAIMS ARISING FROM, RELATING TO, OR WHICH ARISE IN CONNECTION WITH A BREACH BY ANY OF THE SELLERS OF, ANY OF THEIR FUNDAMENTAL

OBLIGATIONS (EACH A "**SELLER FUNDAMENTAL BREACH**") WILL NOT EXCEED IN AGGREGATE [***] , AND (Y) ALL OTHER CLAIMS ARISING UNDER OR IN CONNECTION WITH THIS AGREEMENT OTHER THAN A SELLER FUNDAMENTAL BREACH WILL NOT EXCEED THE GREATER OF [***] OR [***] ; *PROVIDED*, THAT IN EITHER CASE (I) OR (II), SUCH LIMITATION SHALL NOT APPLY TO ANY BREACH OF ARTICLE 4 (CONFIDENTIALITY) OR ARTICLE 5 (INTELLECTUAL PROPERTY RIGHTS) AND SHALL NOT (AA) LIMIT A PARTY'S ABILITY TO SEEK SPECIFIC PERFORMANCE RIGHTS PURSUANT TO THE TERMS HEREOF, OR (BB) LIMIT A PARTY'S LIABILITY IN THE EVENT OF SUCH PARTY'S FRAUD, WILLFUL MISCONDUCT OR GROSS NEGLIGENCE.

For the purposes of this Article 8, a "**Fundamental Obligation**" is any obligation to perform, or which otherwise relates to, the Sellers' obligations under Article 3, any claim by a third party which is subject to indemnification by the Sellers pursuant to Article 7 and all Seller Transition Services that are directly related to [***].

Each of the Sellers agree that they are jointly and severally liable for the performance of all of the Sellers' obligations under this Agreement.

Article 9
Miscellaneous

Section 9.01 Binding Effect; Benefits; Assignment. The terms of this Agreement and will be binding upon, inure to the benefit of and be enforceable by and against such Party and its legal representatives, successors and authorized assigns. Except (a) as otherwise expressly provided in this Agreement or another Transaction Document, or (b) for the provisions of Section 7.01 above, which are intended for the benefit of, and will be enforceable by, Service Recipient Indemnified Parties, nothing in this Agreement or such other Transaction Document, express or implied, is intended to confer upon any other Person any rights or remedies under or by reason of this Agreement or such other Transaction Document, this Agreement and the other Transaction Documents being for the exclusive benefit of the Parties and their respective legal representatives, successors and authorized assigns. No Party may assign any of its rights or obligations under this Agreement to any other Person without the prior written consent of the other Parties to this Agreement, and any such attempted or purported assignment will be null and void; *provided*, *however*, that without obtaining such consent, Buyer may assign any of its rights or delegate any of its obligations, in its sole discretion, under this Agreement (x) to any of its respective controlled Affiliates and (y) in connection with the acquisition (whether by merger, consolidation, sale or otherwise) of Buyer or the Business, as long as, in each case (1) Buyer provides written notice to Sellers of such assignment and (2) such assignee agrees to be or is, by operation of law or otherwise, bound by the terms and conditions of this Agreement.

Section 9.02 Entire Agreement. This Agreement and the appendices attached hereto, the Purchase Agreement (including the Disclosure Schedule), the Confidentiality Agreement and the other Transaction Documents set forth the entire agreement and understanding of the Parties in respect of the transactions contemplated by this Agreement or other Transaction Documents, as applicable, and supersede all prior Contracts, letters of intent, arrangements and understandings relating to the subject matter hereof. No representation, promise, inducement or statement of intention has been made by any Party in connection with the transactions

contemplated by this Agreement or other Transaction Document that is not embodied in this Agreement or such other Transaction Document, as applicable, and no Party will be bound by or liable for any alleged representation, promise, inducement or statement of intention not so embodied.

Section 9.03 Amendment and Waiver. This Agreement may be amended, modified, superseded or canceled, and any of its provisions may be waived, only by a written instrument executed by the Parties or, in the case of a waiver, by the Party waiving compliance. The failure of a Party at any time to require performance of any provision of this Agreement will in no manner affect the right of that Party at a later time to enforce such provision. No waiver by a Party of any provision of this Agreement or the breach of any provision of this Agreement, in any one or more instances, will be deemed to be or construed as a further or continuing waiver of such provision or breach, or any other provision of this Agreement.

Section 9.04 Notices. All notices, demands and other communications given or delivered under this Agreement shall be in writing and shall be delivered pursuant to the terms of Section 9.6 (Notices) of the Purchase Agreement.

Section 9.05 Governing Law; Exclusive Jurisdiction. This Agreement and any dispute about which this Agreement is a subject will be governed by and construed in accordance with the applicable Laws of the State of Delaware, without regard to choice of law principles of any jurisdiction. Each of the Parties irrevocably (i) submits itself to the exclusive jurisdiction of the state or federal courts located in Delaware for the purpose of any Proceeding directly or indirectly based upon, relating to or arising out of this Agreement or any of the transactions contemplated hereby or the negotiation, execution or performance hereof or thereof, (ii) agrees that it will not attempt to deny or defeat such personal jurisdiction by motion or other request for leave from any such court and (iii) agrees that it will not bring any action relating to this Agreement or the transactions contemplated hereby in any court other than the above-named courts. Each of the Parties hereby irrevocably waives, and agrees not to assert, by way of motion, as a defense, counterclaim or otherwise, in any litigation with respect to this Agreement, any claim that it is not personally subject to the jurisdiction of the above-named courts for any reason other than the failure to serve in accordance with this Section 9.05, any claim that it or its property is exempt or immune from jurisdiction of any such court or from any legal process commenced in such courts (whether through service of notice, attachment prior to judgment, attachment in aid of execution of judgment, execution of judgment or otherwise) and, to the fullest extent permitted by the applicable Law, any claim that (A) the suit, action or proceeding in such court is brought in an inconvenient forum, (B) the venue of such suit, action or proceeding is improper or (C) this Agreement, or the subject matter of this Agreement, may not be enforced in or by such courts. Each of the Parties hereby irrevocably consents to service being made through the notice procedures set forth in Section 9.6 (Notices) of the Purchase Agreement and agrees that service of any process, summons, notice or document by personal delivery to the respective addresses set forth in Section 9.6 (Notices) of the Purchase Agreement shall be effective service of process for any litigation in connection with this Agreement or the transactions contemplated hereby. Nothing in this Section 9.05 shall affect the right of any Party to serve legal process in any other manner permitted by Law.

Section 9.06 WAIVER OF TRIAL BY JURY. EACH PARTY ACKNOWLEDGES AND AGREES THAT ANY CONTROVERSY THAT MAY ARISE UNDER THIS AGREEMENT IS LIKELY TO INVOLVE COMPLICATED AND DIFFICULT ISSUES AND

THEREFORE EACH PARTY HEREBY IRREVOCABLY AND UNCONDITIONALLY WAIVES, TO THE FULLEST EXTENT PERMITTED BY APPLICABLE LAW, ANY RIGHT SUCH PARTY MAY HAVE TO A TRIAL BY JURY IN RESPECT OF ANY PROCEEDING DIRECTLY OR INDIRECTLY ARISING OUT OF OR RELATING TO THIS AGREEMENT OR THE TRANSACTIONS CONTEMPLATED HEREBY.

Section 9.07 Headings; Construction. The headings of the articles, sections and paragraphs in this Agreement have been inserted for convenience of reference only and will not restrict or otherwise modify any of the provisions of this Agreement. Unless otherwise expressly provided, the words "including," "include" or "includes," or other similar words, whenever used in this Agreement will be deemed to be immediately followed by the words "without limitation." The words "herein," "hereby," "hereof," "hereunder" and words of similar import refer to this Agreement as a whole (including any appendices, exhibits and schedules hereto) and not merely to any particular section, subsection or paragraph contained in this Agreement. All references in this agreement to Sections, Schedules, Appendices or Exhibits are references to Sections of, and Schedules, Appendices and Exhibits to, this Agreement, unless the context otherwise requires. References in this Agreement to any gender include references to all genders, and references to the singular include references to the plural and vice versa. Neither this Agreement nor any uncertainty or ambiguity herein will be construed against a Party under any rule of construction or otherwise. No Party will be considered the draftsman of this Agreement. The provisions of this Agreement have been negotiated by and chosen by the Parties to express their mutual intent, and no rule of strict construction will be applied against a Party. All references to dollars or "$" in this Agreement are to U.S. Dollars.

Section 9.08 Partial Invalidity. Whenever possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under applicable Law, but in case any one or more of the provisions contained in this Agreement is, for any reason, held by a court of competent jurisdiction to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability will not affect any other provision of this Agreement, which will otherwise remain in full force and effect. Upon any such determination that any provision of this Agreement is invalid, illegal or unenforceable, the Parties will negotiate in good faith to modify this Agreement by replacing the invalid, illegal or unenforceable provisions with legal, valid and enforceable provisions the effect of which comes as close as practicable to the original intent of the Parties in order that the transactions contemplated by this Agreement are consummated as originally contemplated to the greatest extent possible.

Section 9.09 Force Majeure. Any failure or omission by a Party in the performance of any obligation under this Agreement shall not be deemed a breach of this Agreement or create any liability, to the extent the same arises from any cause or causes beyond the reasonable control of such Party, including, but not limited to, the following, which, for purposes of this Agreement shall be regarded as beyond the reasonable control of the Parties hereto: acts of God, fire, storm, flood, earthquake, acts of the public enemy, war, rebellion, insurrection, riot, invasion, epidemic or pandemic (collectively, "**Force Majeure**"); *provided* that the Service Provider shall (i) as soon as reasonably possible after the Force Majeure event first occurs notify the Service Recipient in writing of the Force Majeure, the date on which it started, its likely or potential duration, and the effect of the Force Majeure on its ability to perform any of its obligations under this Agreement, (ii) use commercially reasonable efforts to mitigate the effect

of the Force Majeure on the performance of its obligations under this Agreement, and (iii) resume the performance of the affected obligations whenever such causes are removed.

Section 9.10 Conflict. In case of conflict between the terms and conditions of this Agreement and any Appendix, the terms and conditions of such Appendix shall control and govern as it relates to the Transition Service to which those terms and conditions apply.

Section 9.11 Counterparts. This Agreement may be executed by original signature or by facsimile, digital or other electronic signature and in one or more counterparts, each of which will be deemed an original and together will constitute one and the same instrument.

[*counterpart signature pages follow*]

* * * * *

IN WITNESS WHEREOF, each of the undersigned Parties have executed this Agreement as of the date first written above.

Buyer: BAVARIAN NORDIC A/S

By: _____
Name:
Title:

EII: EMERGENT INTERNATIONAL, INC.

By: _____
Name:
Title:

ETHI: EMERGENT TRAVEL HEALTH, INC.

By: _____
Name:
Title:

Appendix A

Seller Transition Services

- [***]Service Schedule are monthly hours rather than total hours, unless otherwise stated.

Seller Transition Service Schedule

Appendix B

Buyer Transition Services

[***]

Buyer Transition Service Schedule

Appendix C

Transition Service Fee Hourly Rates

[***]

List of Subsidiaries
(as of December 31, 2022)

Name of Subsidiary	**Jurisdiction of Incorporation or Organization**
Domestic	
400 Professional LLC	Delaware
Cangene bioPharma LLC	Maryland
Emergent Commercial Operations Frederick Inc.	Maryland
Emergent Biodefense Operations Lansing LLC	Delaware
Emergent Devices Inc.	Delaware
Emergent Europe Inc.	Delaware
Emergent International Inc.	Delaware
Emergent Manufacturing Operations Baltimore Inc.	Delaware
Emergent Product Development Gaithersburg Inc.	Delaware
Emergent Product Products USA Inc.	Delaware
Emergent Travel Health Inc.	Delaware
International	
Emergent Acquisition Unlimited Company	Ireland
Emergent BioSolutions Berna GmbH	Switzerland
Emergent BioSolutions Canada Inc.	Ontario
Emergent BioSolutions Ireland Limited	Ireland
Emergent BioSolutions Portugal, Lda.	Portugal
Emergent BioSolutions Spain, S.L.	Spain
Emergent Countermeasures International Ltd.	England
Emergent Italy S.r.l.	Italy
Emergent Netherlands B.V.	Netherlands
Emergent Operations Ireland Limited	Ireland
Emergent Sales and Marketing Australia Pty Ltd.	Australia
Emergent Sales and Marketing France S.A.S.	France
Emergent Sales and Marketing Germany GmbH	Germany
Emergent Sales and Marketing Singapore Pte. Ltd.	Singapore
Emergent BioSolutions UK Ltd.	England

Exhibit 23

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-139190) pertaining to the Employee Stock Option Plan, as amended and restated, the 2006 Stock Incentive Plan and individual director options agreements of Emergent BioSolutions, Inc.,
(2) Registration Statement (Form S-8 No. 333-161154) pertaining to the Amended and Restated 2006 Stock Incentive Plan of Emergent BioSolutions Inc.,
(3) Registration Statement (Form S-8 No. 333-184699) pertaining to the 2012 Employee Stock Purchase Plan and the Second Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan,
(4) Registration Statement (Form S-8 No. 333-196232) pertaining to the Third Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan,
(5) Registration Statement (Form S-8 No. 333-216294) pertaining to the Fourth Amended and Restated Emergent BioSolutions Inc. 2006 Stock Incentive Plan,
(6) Registration Statement (Form S-8 No. 333-225283) pertaining to the Emergent BioSolutions Inc. Stock Incentive Plan,
(7) Registration Statement (Form S-8 No. 333-256798) of Emergent BioSolutions Inc. and Subsidiaries, and
(8) Registration Statement (Form S-3ASR No. 333-258634) of Emergent BioSolutions Inc. and Subsidiaries

of our reports dated March 1, 2023, with respect to the consolidated financial statements and schedule of Emergent BioSolutions Inc. and subsidiaries and the effectiveness of internal control over financial reporting of Emergent BioSolutions Inc. and subsidiaries included in this Annual Report (Form 10-K) of Emergent BioSolutions Inc. and subsidiaries for the year ended December 31, 2022.

/s/ Ernst & Young LLP

Tysons, Virginia
March 1, 2023

EXHIBIT 31.1

CERTIFICATION

I, Robert G. Kramer, certify that:

(1) I have reviewed this Annual Report on Form 10-K of Emergent BioSolutions Inc.;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

(4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information, and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2023

/s/ROBERT G. KRAMER
Robert G. Kramer
Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION

I, Richard S. Lindahl, certify that:

(1) I have reviewed this Annual Report on Form 10-K of Emergent BioSolutions Inc.;

(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

(4) The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

(5) The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information, and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2023

/s/RICHARD S. LINDAHL
Richard S. Lindahl
Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Emergent BioSolutions Inc. (the "Company") for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Robert G. Kramer, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 1, 2023

/s/ROBERT G. KRAMER
Robert G. Kramer
Chief Executive Officer

EXHIBIT 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of Emergent BioSolutions Inc. (the "Company") for the period ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Richard S. Lindahl, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 1, 2023

/s/RICHARD S. LINDAHL
Richard S. Lindahl
Chief Financial Officer