INTEGRA LIFESCIENCES HOLDINGS CORP
Form 10-K
February 26, 2019
UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

(Mark One)
x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018
or
o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to
COMMISSION FILE NO. 0-26224

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE (STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION)	51-0317849 (I.R.S. EMPLOYER IDENTIFICATION NO.)
311 ENTERPRISE DRIVE PLAINSBORO, NEW JERSEY (ADDRESS OF PRINCIPAL EXECUTIVE OFFICES)	08536 (ZIP CODE)

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (609) 275-0500
SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of Each Class	Name of Exchange on Which Registered
Common Stock, Par Value $.01 Per Share	The Nasdaq Stock Market LLC

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 the Securities Act. Yes x No o
Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act. Yes o
No x
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 x No o
Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to 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 x No o
Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements

incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. o

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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,” “smaller reporting company,” and “emerging growth company” in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	x	Accelerated filer	o
Non-accelerated filer	o	Smaller reporting company	o

Emerging growth company o

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

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

As of June 30, 2018, the aggregate market value of the registrant’s common stock held by non-affiliates was approximately $4,504.4 million based upon the closing sales price of the registrant’s common stock on The Nasdaq Global Market on such date. The number of shares of the registrant’s Common Stock, $0.01 par value, outstanding as of February 22, 2019 was 85,229,075.

DOCUMENTS INCORPORATED BY REFERENCE:

Certain portions of the registrant’s definitive proxy statement relating to its scheduled May 16, 2019 Annual Meeting of Stockholders are incorporated by reference in Part III of this report.

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PART I

ITEM 1. BUSINESS

OVERVIEW

The terms “we,” “our,” “us,” “Company” and “Integra” refer to Integra LifeSciences Holdings Corporation, a Delaware corporation, and its subsidiaries, unless the context suggests otherwise.

Integra, headquartered in Plainsboro, New Jersey, is a world leader in medical technology. The Company was founded in 1989 with the acquisition of an engineered collagen technology platform used to repair and regenerate tissue. Since then, Integra has developed numerous product lines from this technology for applications ranging from burn and deep tissue wounds, to the repair of dura mater in the brain, and the repair of nerves and tendons. The Company has expanded its base regenerative technology business to include surgical instruments, neurosurgical products, advanced wound care, and orthopedic hardware through a combination of several global acquisitions and by developing products internally to further meet the needs of its customers.

Integra employs approximately 4,500 people dedicated to limiting uncertainty for surgeons, so that they can concentrate on providing the best care for their patients. Integra provides innovative healthcare solutions in more than 130 countries through its nearly 50 offices and its worldwide distribution network.

VISION

We aspire to be a worldwide leader in neurosurgery & reconstructive surgery, with a portfolio of leading businesses that delivers outstanding customer experience through innovation, execution and teamwork to positively impact the lives of millions of patients and families.

STRATEGY

Integra is committed to delivering high quality products that positively impact the lives of millions of patients and their families. We focus on four key pillars: 1) building an execution-focused culture, 2) achieving relevant scale, 3) improving agility and innovation, and 4) leading in customer excellence. We believe that by sharpening our focus on these areas through improved planning and communication, optimization of our infrastructure, and strategically aligned tuck-in acquisitions, we can build scale, increase competitiveness and achieve our long-term goals.

To this end, our executive leadership team has established the following key priorities aligned to this strategy:

Strategic Acquisitions. An important part of our strategy is pursuing strategic transactions and licensing agreements that increase relevant scale in the clinical areas in which we compete. In 2018, integrating the Codman Neurosurgery business, which was acquired from Johnson and Johnson in the previous year, remained a top priority and we will continue to transition the business throughout 2019. This acquisition expanded our portfolio of neurosurgery products and established us as the world leader in neurosurgery. It has also enabled us to bring our entire Integra portfolio to a global market.

Portfolio Optimization and New Product Introductions. We are investing in innovative product development to drive a multi-generational pipeline for our key product franchises. Our product development efforts focus on regenerative technologies and other projects with the potential for significant returns on investment. In 2018, we achieved significant milestones in research and development by successfully launching nine new products. In addition to new product development, we are funding studies to gather clinical evidence to support launches, ensure market access and improve reimbursement for existing products. We also continue to identify low-growth, low-margin products and product franchises for discontinuation and will continue to look at other ways of optimizing our portfolio.

Commercial Channel Investments. With acquisitions, new product introductions and a broader portfolio of products, investing in our sales channels is a core part of our strategy to create specialization and greater focus on reaching our customers and addressing their needs. Internationally, we have increased our commercial resources significantly in almost all markets and are making investments to support our sales organization and maximize our commercial opportunities. We now have a strong international sales channel that will deliver our current portfolio as well as position us for expansion. In addition, we continue to build upon our leadership brands across our product franchises to enable us to engage hospital systems through enterprise-wide contracts.

Customer Excellence. We aspire to be ranked as a best-in-class provider and are committed to strengthening our relationships with all of our customers. We strive to consistently deliver outstanding customer service and continue to invest in technologies, systems and processes to improve the way our customers do business with us. Additionally, we expect to build on the success of our professional education programs to drive continued customer appreciation of our

growing portfolio of medical technologies globally.

BUSINESS SEGMENTS

We currently manufacture and sell our products in the following two global reportable business segments: Codman Specialty Surgical and Orthopedics and Tissue Technologies. We include financial information regarding our reportable business segments and certain geographic information under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and in Note 16, Segment and Geographic Information to our consolidated financial statements.

Codman Specialty Surgical

Our Codman Specialty Surgical business offers global, neurosurgery market-leading technologies, brands and instrumentation. The product portfolio represents a continuum of care from pre-operative, to the neurosurgery operating room, to the neuro-critical care unit and post care for both adult and pediatric patients suffering from brain tumors, brain injury, cerebrospinal fluid pressure complications and other neurological conditions.

The acquisition of Codman Neurosurgery from Johnson & Johnson increased our global direct sales representation and commercial presence. This acquisition expanded the product portfolio of our well known, leading technologies in dural repair, ultrasonic tissue ablation, intracranial pressure ("ICP") monitoring, hydrocephalus management, and cranial stabilization systems, while providing a rich research and development pipeline for growth.

Rounding out the portfolio is a catalog of surgical headlamps, surgical instrumentation, as well as asset management software and support, and after-market service. With thousands of surgical instrument products, including specialty surgical instruments, we call on the central sterile processing unit of hospitals and acute care surgical centers. Additionally, through a strong U.S. distribution model, we can serve the needs of hundreds of physicians, dental and veterinary offices.

Our global commercial network includes clinical specialists, a large direct global sales force and strategic partnerships and distributors that serve hospitals, integrated health networks, group purchasing organizations, clinicians, surgery centers and health care providers.

Orthopedics and Tissue Technologies

Orthopedics and Tissue Technologies products serve some of the fastest growing markets in the medical technology industry and provide solutions that primarily address the needs of orthopedic, plastic, reconstructive and general surgeons. These products focus on addressing soft tissue, nerve, and tendon repairs as well as reconstruction in the hand, wrist, elbow, shoulder, ankle and foot.

We provide regenerative technology solutions for the treatment of acute wounds, such as burns, chronic wounds, including diabetic foot ulcers, surgical tissue repair including hernia repair, peripheral nerve repair and protection, and tendon repair. For extremity bone and joint reconstruction procedures, we sell hardware products, such as bone and joint fixation and joint replacement devices, implants and instruments, which provide for the reconstruction of bone in the hand, wrist, elbow and shoulder (Upper Extremity), and the foot, ankle and leg below the knee (Lower Extremity). In addition, we created opportunities to further expand our presence in the plastic and reconstructive surgery segments with our advanced wound care products such as Medihoney®, weight offloading, and amniotic tissue.

We made significant investments over the last two years with our channel expansion in the U.S. and created four dedicated sales channels to have more focus and specialization within our call points to drive sustainable growth. We have a specialized sales organization composed of directly employed sales representatives, as well as specialty distributors, organized based upon their call point. Our extremity orthopedics sales representatives call on surgeons who treat extremity orthopedic disorders, including osteoarthritis, rheumatoid arthritis, wrist, ankle and shoulder arthroplasty, and other conditions requiring foot or hand reconstruction. Additionally, we sell our shoulder products through a specialty distributor network of sales agents who call on shoulder surgeons. Our wound reconstruction acute (inpatient) sales representatives call on surgeons doing procedures in limb salvage, trauma, wound reconstruction and burns, while our advanced wound care sales representatives call on physicians who treat chronic wounds in the outpatient wound care clinic setting. We also have a dedicated surgical reconstruction sales team focused on plastic and reconstructive surgery and hernia procedures with differentiated products. Finally, we have a distributor network focused on biologics.

Outside the U.S., we have a small direct sales presence, primarily in certain European countries, Australia, New Zealand, and Canada, and use distributors in other international markets to sell certain product lines.

This business segment also includes private-label sales of a broad set of our regenerative and wound care technologies. Our customers are other medical technology companies that sell to end markets primarily in orthopedics, spine, surgical and wound care.

RESEARCH AND DEVELOPMENT STRATEGY

Our research and development activities focus on identifying unmet surgical needs and addressing those needs with innovative solutions and products. We apply our core competency in regenerative technology to products for neurosurgical, orthopedic and wound applications, and we have extensive programs for our core platforms of orthopedic hardware and electromechanical technologies. We are focusing our research and development efforts on products and clinical studies to generate efficacy and health economic evidence.

Regenerative Technologies. Integra was the first and only company to receive a United States Food and Drug Administration ("FDA") claim for regeneration of dermal tissue and is a world leader in regenerative technology. Because regenerative technology products represent a fast-growing, high-margin opportunity for us, we allocate a large portion of our research and development budget to these projects. Our regenerative technology development program applies our expertise in bioengineering to a range of biomaterials including natural collagen and human tissues as well as synthetics such as polymers. These unique product designs are used for neurosurgical and orthopedic surgical applications, as well as dermal regeneration, including the healing of chronic and acute wounds, tendon and nerve repair. Our regenerative technology platform includes our legacy Integra® Dermal Regeneration Template (IDRT) products and complementary technologies that we have acquired over the last few years. Our collagen manufacturing capability, combined with our history of innovation, provides us with strong platform technologies for multiple indications. In 2017 and 2018, we introduced ten new regenerative technology products, including SurgiMend MP to address Abdominal Hernias, SurgiMend PRS for plastic and reconstructive surgery, AmnioExcel Plus and new sizes of PriMatrix® and Omnigraft for treatment of wounds.

Orthopedic Reconstruction. We develop fixation and small joint reconstruction implants and instruments for upper and lower extremities to both provide next generation solutions and expand our product portfolio. This portfolio focuses on joint replacement products. Integra has a strong shoulder portfolio, which includes a total shoulder system and a reverse shoulder. We continue to work on advanced shoulder products and are developing next generation anatomical designs, bone preserving products and techniques, and a pyrocarbon shoulder hemiarthroplasty product to add to that portfolio. We have a strong differentiated asset that resides in our patented pyrocarbon products, and we continue to invest to bring new products to market with this technology, which has shown significantly less wear on bone than traditional metals. To expand our ankle offering, we launched the Integra® XT Ankle Revision System which may be used to revise most ankle prosthesis currently in the market. The non-randomized, prospective, multi-center post-market studies we launched in 2017 in the U.S., Europe and Canada to evaluate 2-year implant survivorship in subjects who received the Cadence® Total Ankle System for primary ankle arthroplasty is progressing and will further evaluate implant survivorship at 5 and 10 years post-operatively.

Electromechanical Technologies and Instrumentation. Because our electromechanical products and instruments address significant needs in surgical procedures and limit uncertainty for surgeons, we continue to invest in approvals for new indications and next generation improvements to our market-leading products. We have several active programs focused on life cycle management and innovation, for capital and disposable products in our portfolio. Our product development efforts are focused on core clinical applications in cerebral spinal fluid (CSF) management, neuro-critical care (NCC) monitoring, minimally invasive instruments and electrosurgery and ultrasonic medical technologies. We also work with several instrument partners to bring new surgical instrument patterns to the market, enabling us to add new instruments with minimal expense. Finally, our lighting franchise is among the most dynamic in the industry, and we continue to invest in ongoing development in LED technology.

COMPETITION

Our competitors for Codman Specialty Surgical are the Aesculap division of B. Braun Medical, Inc., Medtronic, Inc., Stryker Corporation and Becton Dickinson and Company. In addition, we compete with many smaller specialized companies and larger companies that do not otherwise focus on the offerings that Codman Specialty Surgical technologies does. We rely on the depth and breadth of our sales and marketing organization, our innovative technology, and our procurement and manufacturing operations to maintain our competitive position.

Our competition in Orthopedics and Tissue Technologies includes the DePuy/Synthes business of Johnson & Johnson, ACell, Inc., Stryker Corporation, Wright Medical Group, N.V., Smith & Nephew plc, MiMedx Group, Inc., LifeCell Corporation, a subsidiary of Allergan PLC, and Zimmer Biomet Holdings, Inc., as well as other major orthopedic companies that carry a full line of small bone and joint fixation and soft tissue products.

Finally, in certain cases our products compete primarily against medical practices that treat a condition without using a medical device or any particular product, such as medical practices that utilize autograft tissue instead of our dermal regeneration products, duraplasty products and nerve repair products. Depending on the product line, we compete based on our products' features, strength of our sales force or distributors, sophistication of our technology and cost effectiveness of our solution.

GOVERNMENT REGULATION

We are a manufacturer and marketer of medical devices, and therefore are subject to extensive regulation by the FDA, the Center for Medicare Services of the U.S. Department of Health and Human Services, other federal governmental agencies and, in some jurisdictions, by state and foreign governmental authorities. These regulations govern the introduction of new medical devices, the observance of certain standards with respect to the design, manufacture, testing, labeling, promotion and sales of the devices, the maintenance of certain records, the ability to track devices, the reporting of potential product defects, the import and export of devices, and other matters.

United States Food and Drug Administration

The regulatory process for obtaining product approvals and clearances can be onerous and costly. The FDA requires, as a condition to marketing a medical device in the U.S., that we secure a Premarket Notification clearance pursuant to Section 510(k) of the Federal Food, Drug and Cosmetic Act (the “FD&C Act”) or an approved PMA application (or supplemental PMA application). Obtaining these approvals and clearances can take up to several years and may involve preclinical studies and clinical trials. The FDA also may require a post-approval clinical study as a condition of approval. To perform clinical trials for significant risk devices in the U.S. on an unapproved product, we are required to obtain an Investigational Device Exemption ("IDE") from the FDA. The FDA may also require a filing for approval prior to marketing products that are modifications of existing products or new indications for existing products. Moreover, after clearance/approval is given, if the product is shown to be hazardous or defective, the FDA and foreign regulatory agencies have the power to withdraw the clearance or approval, as the case may be, or require us to change the device, its manufacturing process or its labeling, to supply additional proof of its safety and effectiveness or to recall, repair, replace or refund the cost of the medical device. Because we currently export medical devices manufactured in the U.S. that have not been approved by the FDA for distribution in the U.S., we are required to obtain approval/registration in the country to which we are exporting and maintain certain records relating to exports and make these available to the FDA for inspection, if required.

Human Cells, Tissues and Cellular and Tissue-Based Products

Integra, through the acquisition of Derma Sciences and BioD LLC ("BioD") is involved with the recovery, processing, storage, transportation and distribution of donated amniotic tissue. The FDA has specific regulations governing human cells, tissues and cellular and tissue-based products, or HCT/Ps. An HCT/P is a product containing, or consisting of, human cells or tissue intended for transplantation into a human patient. Examples include bone, ligament, skin and cornea.

Some HCT/Ps fall within the definition of a biological product, medical device or drug regulated under the FD&C Act. These biologic, device or drug HCT/Ps must comply both with the requirements exclusively applicable to HCT/Ps and, in addition, with requirements applicable to biologics, devices or drugs, including premarket clearance or approval from the FDA.

Section 361 of the Public Health Service Act (“Section 361”), authorizes the FDA to issue regulations to prevent the introduction, transmission or spread of communicable disease. HCT/Ps regulated as “361” HCT/Ps are subject to requirements relating to registering facilities and listing products with the FDA, screening and testing for tissue donor eligibility, and Good Tissue Practice when processing, storing, labeling, and distributing HCT/Ps, including required labeling information, stringent record keeping, and adverse event reporting.

The American Association of Tissue Banks (“AATB”) has issued operating standards for tissue banking. Compliance with these standards is a requirement in order to become an AATB-accredited tissue establishment. In addition, some states have their own tissue banking regulations. We are licensed or have permits for tissue banking in California, Florida, New York and Maryland.

National Organ Transplant Act. Procurement of certain human organs and tissue for transplantation is subject to the restrictions of the National Organ Transplant Act, which prohibits the transfer of certain human organs, including skin and related tissue for valuable consideration, but permits the reasonable payment associated with the removal, transportation, implantation, processing, preservation, quality control and storage of human tissue and skin. Our subsidiary, BioD LLC is a registered Tissue Bank and is involved with the recovery, storage and transportation of donated human amniotic tissue.

Amniotic tissue is considered an HCT/P. However, on June 22, 2015, the FDA issued an Untitled Letter alleging that BioD’s morselized amniotic membrane tissue-based products do not meet the criteria for regulation as HCT/Ps solely

under Section 361 and that, as a result, BioD would need a biologics license to lawfully market those morselized products. Since the issuance of the Untitled Letter, BioD and more recently the Company have been in discussions with the FDA to communicate their disagreement with the FDA's assertion that certain products are more than minimally manipulated. The FDA has not changed its position that certain of the BioD acquired products are not eligible for marketing solely under Section 361. In November 2017, the FDA issued the final guidance document related to human tissue titled, "Regulatory Considerations for Human Cells, Tissues, and Cellular and Tissue-Based Products: Minimal Manipulation and Homologous Use" (the "HCT/P Final Guidance"). The HCT/P Final Guidance maintains the FDA's position that products such as the Company's morselized amniotic membrane tissue-based products do not meet the criteria for regulation solely as HCT/Ps. In addition, the FDA articulated a risk-based approach to enforcement and, while some uses for amniotic membrane tissue-based products would enjoy as much as thirty-six months of enforcement discretion, other high-risk uses could be subject to immediate enforcement action. The Company does not believe the uses for its

amniotic membrane tissue-based products fall into the high risk category. As of February 26, 2019, the Company has not received any further notice of enforcement action from the FDA regarding its morselized amniotic tissue-based products. Revenues from BioD morselized amniotic membrane-based products for the year ended December 31, 2018 were less than 1.0% of consolidated revenues. See “Item 1A. Risk Factors — Certain of our products are derived from human tissue and are subject to additional regulations and requirements.”

Medical Device Regulations

We also are required to register with the FDA as a medical device manufacturer. As such, our manufacturing sites are subject to periodic inspection by the FDA for compliance with the FDA's Quality System Regulations. These regulations require that we manufacture our products and maintain our documents in a prescribed manner with respect to design, manufacturing, testing and control activities. Further, we are required to comply with various FDA requirements and other legal requirements for labeling and promotion. If the FDA believes that a company is not in compliance with applicable regulations, it may issue a warning letter, institute proceedings to detain or seize products, issue a recall order, impose operating restrictions, enjoin future violations and assess civil penalties against that company, its officers or its employees and may recommend criminal prosecution to the U.S. Department of Justice. Medical device regulations also are in effect in many of the countries in which we do business outside the U.S. These laws range from comprehensive medical device approval and Quality System requirements for some or all of our medical device products to simpler requests for product data or certifications. Under the European Union Medical Device Directive, medical devices must meet the Medical Device Directive standards and receive CE Mark Certification prior to marketing in the European Union (the “EU”). In addition, the EU enacted the EU Medical Device Regulation, which imposes stricter requirements on the marketing and sales of medical devices which includes but is not limited to quality systems and labeling. CE Mark Certification requires a comprehensive quality system program, technical documentation, clinical evaluation and data on the product, which are then reviewed by a Notified Body. A Notified Body is an organization designated by the national governments of the EU member states to make independent judgments about whether a product complies with the requirements established by each CE marking directive. The Medical Device Directive, Medical Device Regulation, ISO 9000 series and ISO 13485 are recognized international quality standards that are designed to ensure that we develop and manufacture quality medical devices. Other countries are also instituting regulations regarding medical devices or interpreting and enforcing existing regulations more strictly. Compliance with these regulations requires extensive documentation and clinical reports for all of our products, revisions to labeling, and other requirements such as facility inspections to comply with the registration requirements. A recognized Notified Body audits our facilities annually to verify our compliance with the ISO 13485 Quality System standard.

Certain countries, as well as the EU, have issued regulations that govern products that contain materials derived from animal sources. Regulatory authorities are particularly concerned with materials infected with the agent that causes bovine spongiform encephalopathy (“BSE”), otherwise known as mad cow disease. These regulations affect our dermal regeneration products, duraplasty products, hernia repair products, biomaterial products for the spine, nerve and tendon repair products and certain other products, all of which contain material derived from bovine tissue. Although we take great care to provide that our products are safe and free of agents that can cause disease, products that contain materials derived from animals, including our products, may become subject to additional regulation, or even be banned in certain countries, because of concern over the potential for prion transmission. Significant new regulations, a ban of our products, or a movement away from bovine-derived products because of an outbreak of BSE could have a material, adverse effect on our current business or our ability to expand our business. See “Item 1A. Risk Factors - Certain of our products contain materials derived from animal sources and may become subject to additional regulation.”

Postmarket Requirements. After a device is cleared or approved for commercial distribution, numerous regulatory requirements apply. These include the FDA Quality System Regulations which cover the procedures and documentation of the design, testing, production, control, quality assurance, labeling, packaging, sterilization, storage and shipping of medical devices; the FDA's general prohibition against promoting products for unapproved or 'off-label' uses; the Medical Device Reporting regulation, which requires that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur; and the Reports of Corrections and Removals regulation,

which require manufacturers to report recalls and field corrective actions to the FDA if initiated to reduce a risk to health posed by the device or to remedy a violation of the FD&C Act.

Other regulations

Anti-Bribery Laws. In the U.S., we are subject to laws and regulations pertaining to healthcare fraud and abuse, including anti-kickback laws and physician self-referral laws that regulate the means by which companies in the health care industry may market their products to hospitals and health care professionals and may compete by discounting the prices of their products. Similar anti-bribery laws exist in many of the countries in which we sell our products outside the U.S., as well as the United States Foreign Corrupt Practices Act (which addresses the activities of U.S. companies in foreign markets). Our products also are subject to regulation regarding reimbursement, and U.S. healthcare laws apply when a customer submits a claim for a product that is

reimbursed under a federally funded healthcare program. These global laws require that we exercise care in designing our sales and marketing practices, including involving interactions with healthcare professionals, and customer discount arrangements. See “Item 1A. Risk Factors - Oversight of the medical device industry might affect the manner in which we may sell medical devices and compete in the marketplace.”

Import-export. Our international operations subject us to laws regarding sanctioned countries, entities and persons, customs, and import-export. Among other things, these laws restrict, and in some cases can prevent, U.S. companies from directly or indirectly selling goods, technology or services to people or entities in certain countries. In addition, these laws require that we exercise care in our business dealings with entities in and from foreign countries.

Hazardous materials. Our research, development and manufacturing processes involve the controlled use of certain hazardous materials. We are subject to country-specific, federal, state and local laws and regulations governing the use, manufacture, storage, handling and disposal of these materials and certain waste products. We believe that our environmental, health and safety procedures for handling and disposing of these materials comply with the standards prescribed by the controlling laws and regulations. However, risk of accidental releases or injury from these materials is possible. These risks are managed to minimize or eliminate associated business impacts. In the event of this type of accident, we could be held liable for damages that may result, and any liability could exceed our resources. We could be subject to a regulatory shutdown of a facility that could prevent the distribution and sale of products manufactured there for a significant period of time, and we could suffer a casualty loss that could require a shutdown of the facility in order to repair it, any of which could have a material, adverse effect on our business. Although we continuously strive to maintain full compliance with respect to all applicable global environmental, health and safety laws and regulations, we could incur substantial costs to fully comply with future laws and regulations, and our operations, business or assets may be negatively affected. Furthermore, global environmental, health and safety compliance is an ongoing process. Integra has compliance procedures in place for compliance with Employee Health & Safety laws, driven by a centrally led organizational structure that ensures proper implementation, which is essential to our overall business objectives.

In addition to the above regulations, we are, and may be, subject to regulation under country-specific federal and state laws, including, but not limited to, requirements regarding record keeping, and the maintenance of personal information, including personal health information. As a public company, we are subject to the securities laws and regulations, including the Sarbanes-Oxley Act of 2002. We also are subject to other present and could be subject to possible future, local, state, federal and foreign regulations.

Third-Party Reimbursement. Healthcare providers that purchase medical devices generally rely on third-party payors, including, in the U.S., the Medicare and Medicaid programs and private payors, such as indemnity insurers, employer group health insurance programs and managed care plans, to reimburse all or part of the cost of the products. As a result, demand for our products is and will continue to be dependent in part on the coverage and reimbursement policies of these payors. The manner in which reimbursement is sought and obtained varies based upon the type of payor involved and the setting in which the product is furnished and utilized. Reimbursement from Medicare, Medicaid and other third-party payors may be subject to periodic adjustments as a result of legislative, regulatory and policy changes, as well as budgetary pressures. Possible reductions in, or eliminations of, coverage or reimbursement by third-party payors, or denial of, or provision of uneconomical reimbursement for new products may affect our customers' revenue and ability to purchase our products. Any changes in the healthcare regulatory, payment or enforcement landscape relative to our customers' healthcare services have the potential to significantly affect our operations and revenue.

Data Privacy and Cybersecurity Laws and Regulations. As a business with a significant global footprint, compliance with evolving regulations and standards in data privacy and cybersecurity (relating to the confidentiality and security of our information technology systems, products such as medical devices, and other services provided by us) may result in increased costs, lower revenue, new complexities in compliance, new challenges for competition, and the threat of increased regulatory enforcement activity. Our business relies on the secure electronic transmission, storage and hosting of sensitive information, including personal information, financial information, intellectual property, and other sensitive information related to our customers and workforce.

For example, in the U.S. the collection, maintenance, protection, use, transmission, disclosure and disposal of certain personal information and the security of medical devices are regulated at the U.S. federal and state, and industry

levels. U.S. federal and state laws protect the confidentiality of certain patient health information, including patient medical records, and restrict the use and disclosure of patient health information by health care providers. In addition, the FDA has issued guidance advising manufacturers to take cybersecurity risks into account in product design for connected medical devices and systems, to assure that appropriate safeguards are in place to reduce the risk of unauthorized access or modification to medical devices that contain software and reduce the risk of introducing threats into hospital systems that are connected to such devices. The FDA also issued guidance on post market management of cyber security in medical devices.

Outside the U.S., we are impacted by the privacy and data security requirements at the international, national and regional level, and on an industry specific basis. Legal requirements in these countries relating to the collection, storage, handling and transfer of personal data and, potentially, intellectual property continue to evolve with increasingly strict enforcement regimes. In Europe,

for example, we are subject to the EU data protection regulations, including the current EU Directive on Data Protection, which requires member states to impose minimum restrictions on the collection, use and transfer of personal data. A new EU General Data Protection Regulation ("GDPR") which became enforceable in May 2018 includes, among other things, a requirement for prompt notice of data breaches to data subjects and supervisory authorities in certain circumstances and significant fines for non-compliance. The GDPR also requires companies processing personal data of individuals residing in the EU to comply with EU privacy and data protection rules. These laws and regulations impact the ways in which we use and manage personal data, protected health information, and our information technology systems. They also impact our ability to move, store, and access data across geographic boundaries. Compliance with these requirements may require changes in business practices, complicate our operations, and add complexity and additional management and oversight needs. They also may complicate our clinical research activities, as well as product offerings that involve transmission or use of clinical data.

INTELLECTUAL PROPERTY

We seek patent and trademark protection for our key technology, products and product improvements, both in the U.S. and in selected foreign countries. When determined appropriate, we have enforced and plan to continue to enforce and defend our patent and trademark rights. In general, however, we do not rely solely on our patent and trademark estate to provide us with any significant competitive advantages as it relates to our existing product lines. We also rely upon trade secrets and continuing technological innovations to develop and maintain our competitive position. In an effort to protect our trade secrets, we have a policy of requiring our employees, consultants and advisors to execute proprietary information and invention assignment agreements upon commencement of employment or consulting relationships with us. These agreements also provide that all confidential information developed or made known to the individual during the course of their relationship with us must be kept confidential, except in specified circumstances. AccuDrain®, AmnioExcel®, AmnioMatrix®, BioDFactor®, BioDFence®, BioDOptix®, BioDRestore™, Bioguard®, BioMotion®, Bold®, Budde®, Buzz™, Cadence®, Capture™, Codman®, Codman Certas®, Codman VersaTru®, CRW®, CUSA®, DigiFuse®, DirectLink®, DuraGen®, DuraSeal®, First Choice®, Hallu®, HeliCote®, HeliPlug®, HeliTape®, HeliMend®, Helistat®, Helitene®, Integra®, IntegraLink®, IPP-ON®, Isocool®, Jarit®, Licox®, LimiTorr™, Luxtec®, MediHoney®, MemoFix®, MicroFrance®, Miltex®, Movement®, NeuraGen®, NeuraWrap™, NuGrip®, Omnigraft®, Omni-Tract®, OSV II®, Qwix®, Padgett®, Panta®, PriMatrix®, PyroSphere®, Redmond™, Ruggles®, SafeGuard®, Salto Talaris®, Subtalar MBA®, SurgiMend®, TCC-EZ®, TenoGlide®, Ti6®, Tibiaxys®, TissueMend®, Titan™ , TruArch®, Uni-CP®, Uni-Clip®, Xtrasorb® and the Integra logo are some of the material trademarks of Integra LifeSciences Corporation and its subsidiaries. MAYFIELD® is a registered trademark of SM USA, Inc., and is used by Integra under license.

EMPLOYEES

At December 31, 2018, we had approximately 4,500 employees engaged in production and production support for warehouse, engineering and facilities, quality assurance, quality control, research and development, regulatory and clinical affairs, sales, marketing, administration and finance. Except for certain employees at our facilities in Austria, Belgium, Brazil, France, Germany, Italy and Mexico, none of our employees are subject to a collective bargaining agreement.

FINANCIAL INFORMATION ABOUT GEOGRAPHIC AREAS

Financial information about our geographical areas is set forth under “Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations - Geographic Product Revenues and Operations” and in our financial statements Note 16, Segment and Geographic Information, to our consolidated financial statements.

SOURCES OF RAW MATERIALS

In general, raw materials essential to our businesses are readily available from multiple sources. For reasons of quality assurance, availability, or cost effectiveness, certain components and raw materials are available only from a sole supplier. Our policy is to maintain sufficient inventory of components so that our production will not be significantly disrupted even if a particular component or material is not available for a period of time.

Certain of our products, including our dermal regeneration products, duraplasty products, wound care products, bone void fillers, nerve and tendon repair products and certain other products, contain material derived from bovine tissue. We take great care to provide that our products are safe and free of agents that can cause disease. In particular, the collagen used in the products that Integra manufactures is derived either from the deep flexor tendon of cattle less than

24 months old from New Zealand, a country that has never had a reported case of bovine spongiform encephalopathy, or from the U.S. or from fetal bovine dermis. The World Health Organization classifies different types of cattle tissue for relative risk of BSE transmission. Deep flexor tendon and fetal bovine skin are in the lowest-risk category for BSE transmission, and is therefore considered to have a negligible risk of containing the agent that causes BSE.

SEASONALITY

Revenues during our fourth quarter tend to be stronger than other quarters because many hospitals increase their purchases of our products during the fourth quarter to coincide with the end of their budget cycles in the U.S. In general, our first quarter usually has lower revenues than the preceding fourth quarter, the second and third quarters have higher revenues than the first quarter, and the fourth quarter revenues are the highest in the year. The main exceptions to this pattern occur because of material intervening acquisitions.

AVAILABLE INFORMATION

We are subject to the informational requirements of the Securities Exchange Act of 1934, as amended, (the “Exchange Act”). In accordance with the Exchange Act, we file annual, quarterly and special reports, proxy statements and other information with the Securities and Exchange Commission. You may view our financial information, including the information contained in this report, and other reports we file with the Securities and Exchange Commission, on the Internet, without charge as soon as reasonably practicable after we file them with the Securities and Exchange Commission, in the “SEC Filings” page of the Investor Relations section of our website at www.integralife.com. You may also obtain a copy of any of these reports, without charge, from our Investor Relations department, 311 Enterprise Drive, Plainsboro, NJ 08536. Alternatively, you may view or obtain reports filed with the Securities and Exchange Commission at the SEC Public Reference Room at 100 F Street, N.E. in Washington, D.C. 20549, or at the Securities and Exchange Commission's Internet site at www.sec.gov. Please call the Securities and Exchange Commission at 1-800-SEC-0330 for further information on the operation of the public reference facilities.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

We have made statements in this report, including statements under “Business” and “Management's Discussion and Analysis of Financial Condition and Results of Operations” that constitute forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the “Securities Act”), and Section 21E of the Exchange Act. These forward-looking statements are subject to a number of risks, uncertainties and assumptions about us including, among other things:

- general economic and business conditions, both nationally and in our international markets;
- our expectations and estimates concerning future financial performance, financing plans and the impact of competition;
- anticipated trends in our business;
- anticipated demand for our products, particularly capital equipment;
- our ability to produce regenerative-based products in sufficient quantities to meet sales demands;
- our expectations concerning our ongoing restructuring, integration and manufacturing transfer and expansion activities;
- existing and future regulations affecting our business, and enforcement of those regulations;
- our ability to obtain additional debt and equity financing to fund capital expenditures, working capital requirements and acquisitions;
- physicians' willingness to adopt our recently launched and planned products, third-party payors' willingness to provide or continue reimbursement for any of our products and our ability to secure regulatory approval for products in development;
- initiatives launched by our competitors;
- our ability to protect our intellectual property, including trade secrets;
- our ability to complete acquisitions, integrate operations post-acquisition and maintain relationships with customers of acquired entities;
- our ability to remediate all matters identified in FDA observations and warning letters that we received or may receive; and
- other risk factors described in the section entitled "Risk Factors" in this report.

You can identify these forward-looking statements by forward-looking words such as “believe,” “may,” “could,” “might,” “wil “estimate,” “continue,” “anticipate,” “intend,” “seek,” “plan,” “expect,” “should,” “would” and similar expressions in this repo undertake no obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise. In light of these risks and uncertainties, the forward-looking events and circumstances discussed in this report may not occur and actual results could differ materially from those anticipated or implied in the forward-looking statements.

ITEM 1A. RISK FACTORS

Risks Related to Our Business

Our operating results may fluctuate.

Our operating results, including components of operating results such as gross margin and cost of product sales, may fluctuate from time to time, and such fluctuations could affect our stock price. Our operating results have fluctuated in the past and can be expected to fluctuate from time to time in the future. Some of the factors that may cause these fluctuations include:

- economic conditions worldwide, which could affect the ability of hospitals and other customers to purchase our products and could result in a reduction in elective and non-reimbursed operative procedures;
- the impact of acquisitions and our ability to integrate acquisitions;
- the impact of our restructuring activities;
- expenditures for major initiatives, including acquired businesses and integrations thereof and restructuring;
- the timing of significant customer orders, which tend to increase in the fourth quarter to coincide with the end of budget cycles for many hospitals;

- increased competition for a wide range of customers across all our product lines in the markets our products are sold;
- market acceptance of our existing products, as well as products in development;
- the timing of regulatory approvals as well as changes in country-specific regulatory requirements;
- changes in the rates of exchange between the U.S. dollar and other currencies of foreign countries in which we do business;
- changes in the variable interest rates of our debt instruments which could impact debt service requirements;
- potential backorders, lost sales and expenses incurred in connection with product recalls or field corrective actions;
- disruption of our operations and sales resulting from extreme weather conditions or natural disasters that damage our manufacturing or distribution facilities, the suppliers and service providers for those facilities, or the infrastructure in the locations of those facilities;
- our ability to manufacture and ship our products efficiently or in sufficient quantities to meet sales demands;

- changes in the cost or decreases in the supply of raw materials, including energy, steel, pyrocarbon and honey;
- the timing of our research and development expenditures;
- reimbursement for our products by third-party payors such as Medicare, Medicaid, private and public health insurers and foreign governmental health systems;
- the ability to maintain existing distribution rights to and from certain third parties;
- the ability to maintain business if or when we opt to convert such business from distributors to a direct sales model;
- the ability of our new commercial sales representatives to obtain sales targets in a reasonable time frame;
- the impact of changes to our sales organization, including channel expansion in the U.S. and increased specialization;
- peer-reviewed publications discussing the clinical effectiveness of the products we sell;
- inspections of our manufacturing facilities for compliance with Quality System Regulations (Good Manufacturing Practices) which could result in Form 483 observations, warning letters, injunctions or other adverse findings from the FDA or from equivalent regulatory bodies, and corrective actions, procedural changes and other actions that we determine are necessary or appropriate to address the results of those inspections, any of which may affect production and our ability to supply our customers with our products;
- changes in regulations or guidelines that impact the sales and marketing practices for products that we sell;
- the increased regulatory scrutiny of certain of our products, including products which we manufacture for others, could result in their being removed from the market or involve field corrective actions that could affect the marketability of our products;
- enforcement or defense of intellectual property rights;
- changes in tax laws, or their interpretations; and
- the impact of goodwill and intangible asset impairment charges if future operating results of the acquired businesses are significantly less than the results anticipated at the time of the acquisitions.

The industry and market segments in which we operate are highly competitive, and we may be unable to compete effectively with other companies.

There is intense competition among medical device companies. We compete with established medical technology companies in many of our product areas. Competition also comes from early-stage companies that have alternative technological solutions for our primary clinical targets, as well as universities, research institutions and other non-profit entities. In certain cases, our products compete primarily against medical practices that treat a condition without using a device or any particular product, such as the medical practices that use autograft tissue instead of our dermal regeneration products, duraplasty products and nerve repair products, or that use other technologies that cost less than our products. Many of our competitors have access to greater financial, technical, research and development, marketing, manufacturing, sales, distribution, administrative, consulting and other resources than we do. Our competitors may be more effective at developing commercial products. Our competitors may be able to gain market share by offering lower-cost products or by offering products that enjoy better reimbursement from third-party payors, such as Medicare, Medicaid, private and public health insurers and foreign governmental health systems.

Our competitive position depends on our ability to achieve market acceptance for our products, develop new products, implement production and marketing plans, secure regulatory approval for products under development, obtain and maintain reimbursement coverage under Medicare, Medicaid, private and public health insurers and foreign governmental health systems, obtain patent protection and produce products consistently in sufficient quantities to meet demand. We may need to develop new applications for our products to remain competitive. Technological advances by one or more of our current or future competitors or their achievement of superior reimbursement from Medicare, Medicaid, private and public health insurers and foreign governmental health systems could render our present or future products obsolete or uneconomical. Our future success will depend upon our ability to compete effectively against current technology as well as to respond effectively to technological advances, changes in customers' requirements, or changes in payor or regulatory evidence requirements. Additionally, purchasing decisions of our customers may be based on clinical evidence or comparative effectiveness studies and, because of our vast array of products, we might not be able to fund the studies necessary to gain entry or maintain our position or provide the required information to compete effectively. Other companies may have more resources available to fund such studies. For example, competitors have launched and have been developing products to compete with our dural repair products, extremity reconstruction implants, regenerative skin, neuro critical care monitors and ultrasonic tissue

ablation devices, among others. Further, in the current environment of managed care, consolidation among health care providers, increased competition, and declining reimbursement rates, we have been increasingly required to compete on the basis of price. Competitive pressures could adversely affect our profitability. Given these factors, we cannot guarantee that we will be able to compete effectively or continue our level of success in the areas in which we compete.

If there is a determination that the spin-off of SeaSpine is taxable for U.S. federal income tax purposes, then we and our stockholders that are subject to U.S. federal income tax could incur significant U.S. federal income tax liabilities and, in certain circumstances, we could be required to indemnify SeaSpine for material taxes pursuant to indemnification obligations under the tax matters agreement.

On July 1, 2015, we completed the separation (the "Separation") of our orthobiologics and spinal fusion hardware business, now known as SeaSpine Holdings Corporation ("SeaSpine"), from the Company. We received an opinion of Latham & Watkins LLP, tax counsel to us (the "Tax Opinion"), substantially to the effect that (i) the contribution of the stock of SeaSpine Orthopedics Corporation to SeaSpine, together with the internal distribution of the stock of SeaSpine to Integra (collectively, the "internal distribution"), will constitute a reorganization under Sections 355 and 368(a)(1)(D) of the Internal Revenue Code of 1986, as amended (the "Code") and (ii) the contribution of cash from us to SeaSpine (the "cash contribution"), together with the distribution of the stock of SeaSpine to our shareholders (the "distribution"), will constitute a reorganization under Sections 355 and 368(a)(1)(D) of the Code. Based on this tax treatment, the distribution will be tax-free to Integra and its stockholders for U.S. federal income tax purposes (except for any cash received in lieu of fractional shares). The Tax Opinion relied on certain facts, assumptions, representations and undertakings from us and SeaSpine regarding the past and future conduct of the companies' respective businesses and other matters. The Tax Opinion is not binding on the U.S. Internal Revenue Service (the "IRS") or the courts. Notwithstanding the opinion, the IRS could determine on audit that the internal distribution, the cash contribution and the distribution should be treated as taxable transactions if it determines that any of the facts, assumptions, representations or undertakings we or SeaSpine have made is not correct or has been violated, or that the internal distribution, the cash contribution and the distribution should be taxable for other reasons, including as a result of a significant change in stock or asset ownership after the distribution. If the distribution ultimately is determined to be taxable, the distribution could be treated as a taxable dividend or capital gain to our stockholders for U.S. federal income tax purposes, and our stockholders could incur significant U.S. federal income tax liabilities. In addition, we would recognize gain in an amount equal to the excess of the fair market value of shares of SeaSpine common stock distributed to our stockholders on the distribution date over our tax basis in such shares of SeaSpine common stock. Moreover, we could incur significant U.S. federal income tax liabilities if it is ultimately determined that the internal distribution does not qualify as a transaction that is tax-free for U.S. federal income tax purposes.

We may be subject to continuing contingent liabilities of SeaSpine following the spin-off.

After the Separation, there are several significant areas where the liabilities of SeaSpine may become our obligations. For example, under the Code and the related rules and regulations, each corporation that was a member of our consolidated U.S. federal income tax reporting group during any taxable period or portion of any taxable period ending on or before the effective time of the spin-off is jointly and severally liable for the U.S. federal income tax liability of the entire consolidated tax reporting group for that taxable period. If SeaSpine is unable to pay any prior period taxes for which it is responsible, we could be required to pay the entire amount of such taxes.

Our current strategy involves growth through acquisitions, which requires us to incur substantial costs and potential liabilities for which we may never realize the anticipated benefits.

In addition to internally generated growth, our current strategy involves growth through acquisitions. Between January 1, 2016 and December 31, 2018, we have acquired 3 businesses at a total cost of approximately $1.2 billion.

We may be unable to continue to implement our growth strategy, and our strategy ultimately may be unsuccessful. A significant portion of our growth in revenues has resulted from, and is expected to continue to result from, the acquisition of businesses or products complementary to our own. We engage in evaluations of potential acquisitions and are in various stages of discussion regarding possible acquisitions, certain of which, if consummated, could be significant to us. Any new acquisition could result in material transaction expenses, increased interest and amortization expense, increased depreciation expense, increased operating expense, and possible in-process research and development charges for acquisitions that do not meet the definition of a "business," any of which could have a material, adverse effect on our operating results. Certain businesses that we acquire may not have adequate financial, disclosure, regulatory, quality or other compliance controls at the time we acquire them and could require significant expenditures to address those controls or subject us to increased risk. As we grow by acquisition, we must manage and integrate the new businesses to bring them into our systems for financial, disclosure, compliance, regulatory and quality control, realize economies of scale, and control costs. If we cannot integrate acquired businesses and

operations, manage the cost of providing our products or price our products appropriately, our profitability could suffer. In addition, acquisitions involve other risks, including diversion of management resources otherwise available for the running of our business and the development of our business as well as risks associated with entering markets in which our marketing teams and sales force has limited experience or where experienced distribution alliances are not available. Our future profitability will depend in part upon our ability to develop further our resources to adapt to these new products or business areas and to identify and enter into or maintain satisfactory distribution networks. Further, as a result of our acquisitions of other healthcare businesses, we may be subject to the risk of unanticipated business uncertainties, regulatory and other compliance matters or legal liabilities relating to those acquired businesses for which the sellers of the acquired businesses may not indemnify us, for which we may not be able to obtain insurance (or adequate insurance), or for which the indemnification may not be sufficient to cover the ultimate liabilities. We may not be

able to identify suitable acquisition candidates in the future, obtain acceptable financing or consummate any future acquisitions. Certain potential acquisitions are subject to antitrust and competition laws, which laws could impact our ability to pursue strategic acquisitions and could result in mandated divestitures. If we are unsuccessful in our acquisition strategy, we may be unable to meet our financial targets and our financial performance could be materially and adversely affected.

Our future financial results could be adversely affected by impairments or other charges.

Since we have grown through acquisitions, we have $926.4 million of goodwill and $163.1 million of indefinite-lived intangible assets as of December 31, 2018. Under the authoritative guidance for determining the useful life of intangible assets, we are required to test both goodwill and indefinite-lived intangible assets for impairment on an annual basis based upon a fair value approach, rather than amortizing them over time. We are also required to test goodwill and indefinite-lived intangible assets for impairment between annual tests if an event occurs such as a significant decline in revenues or cash flows for certain products, or the discount rates used in the calculations of discounted cash flow change significantly, or circumstances change that would more likely than not reduce our enterprise fair value below its book value. If such a decline, rate change or circumstance were to materialize, we may record an impairment of these intangible assets that could be material to the financial statements. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations - Critical Accounting Estimates” of this report.

The guidance on long-lived assets requires that we assess the impairment of our long-lived assets, including finite-lived intangible assets, whenever events or changes in circumstances indicate that the carrying value may not be recoverable as measured by the sum of the expected future undiscounted cash flows. As of December 31, 2018, we had $916.4 million and $300.1 million of finite-lived intangible assets and property, plant and equipment, respectively.

At December 31, 2018, our trade names had a carrying value of $241.4 million and decisions relating to our trade names may occur over time. Additionally, we may discontinue certain products in the future as we continue to assess the profitability of our product lines. As a result, we may need to record impairment charges or accelerate amortization on certain trade names or technology-related intangible assets in the future.

The value of a medical device business is often volatile, and the assumptions underlying our estimates made in connection with our assessments under the guidance may change as a result of that volatility or other factors outside our control and may result in impairment charges. The amount of any such impairment charges could be significant and could have a material, adverse effect on our reported financial results for the period in which the charge is taken and could have an adverse effect on the market price of our securities, including the notes and the common stock into which they may be converted.

The adoption of healthcare reform in the U.S. and initiatives sponsored by other governments may adversely affect our business, results of operations and/or financial condition.

Our operations may be substantially affected by potential fundamental changes in the global political, economic and regulatory landscape of the healthcare industry. Government and private sector initiatives to limit the growth of healthcare costs are continuing in the U.S., and in many other countries in which we do business, causing the marketplace to put increased emphasis on the delivery of more cost-effective treatments. These initiatives include price regulation, competitive pricing, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements. The adoption of some or all of these initiatives could have a material, adverse effect on our financial condition and results of operations.

The Patient Protection and Affordable Care Act (the “ACA”), signed into law in March 2010, includes several provisions that impact our businesses in the U.S. The ACA includes provisions that, among other things, reduce and/or limit Medicare reimbursement, require all individuals to have health insurance (with limited exceptions), require detailed disclosure of gifts and other remuneration made to healthcare professionals. Specifically, commencing on January 1, 2013, the ACA requires the medical device industry to subsidize healthcare reform by implementing a 2.3% excise tax on the sale of certain medical devices by a manufacturer, producer or importer of such devices in the U.S. In December 2015, President Obama signed into law The Consolidated Appropriations Act, which included a two-year moratorium on the excise tax for 2016 and 2017. On January 22, 2018, President Trump signed into law a funding bill, which extended the moratorium on the excise tax through December 31, 2019. Unless there is further

legislative action during that period, the medical device excise tax will be reinstated on or after January 1, 2020. While this two-year moratorium on the medical device excise tax could provide a short-term benefit to the Company in terms of providing additional monies available to spend on various projects in 2018 and 2019, we are unable to predict what the long-term impact will have on our financial statements and financial performance.

Since the adoption of the ACA, the law has been challenged before the U.S. Supreme Court, and several bills have been and may continue to be introduced in Congress to delay, defund or repeal implementation of or amend significant provisions of the ACA. In addition, there continues to be ongoing litigation over the interpretation and implementation of certain provisions of the law. Furthermore, on January 20, 2017, an executive order was issued that, among other things, stated the intention of the administration to repeal the ACA and, pending that repeal, instructed the executive branch of the Federal government to defer or delay the implementation of any provision or requirement of the ACA that would impose a fiscal burden on any state or a cost,

fee, tax or penalty on any individual, family, health care provider, health insurer, or manufacturer of pharmaceuticals or medical devices. On December 22, 2017, President Trump signed into law the Tax Cuts and Jobs Act, which eliminates the penalty for individuals who fail to purchase acceptable health insurance starting in 2019 and will most likely result in the reduction in the number of insured people in the U.S. We cannot predict whether the ACA will be repealed, replaced, or further modified, what impact the President's executive order will have on the implementation and enforcement of the provisions of the ACA, or what impact the elimination of the penalty and resulting reduction in the number of insured people in the U.S. will have on the demand and pricing for our products. In addition, if the ACA is replaced or modified, we cannot predict what the replacement plan or modifications would be, when the replacement plan or modifications would become effective, or whether any of the existing provisions of the ACA would remain in place. As a result, while we are unable to predict the effect of the ACA and the various activities surrounding it on our business, financial condition or results of operations, changes to this law, or a new law that replaces it, could materially and adversely affect our business and results of operations.

In addition to the ACA, the Medicare Access and CHIP Reauthorization Act of 2015 ("MACRA") repealed the Sustainable Growth Rate formula used to calculate Medicare payment updates for physicians providing services to Medicare beneficiaries. In its place, MACRA introduced the Quality Payment Program ("QPP"), which is a value-based program that focuses on quality and outcomes as a metric for physician reimbursement. The Centers for Medicare and Medicaid Services released its final rules for the QPP in October 2016. The QPP, which impacts more than 600,000 physicians and other practice-based clinicians, represents a fundamental change in physician reimbursement, transitioning from a system that solely rewards volume of care to one that also rewards quality and value of care. While the full impact of QPP on physicians' practices and product selection decisions will not be fully known until payment adjustments go into effect in 2019, 2017 represented the first performance measurement year. The program's increased emphasis on quality and cost of care may encourage physicians to merge practices or seek direct employment with hospitals. In addition, the ACA encourages hospitals and physicians to work collaboratively through shared savings programs as well as other bundled payment initiatives. These shifts could lead to a consolidation of hospital providers into larger delivery networks with increased price negotiation strength resulting in downward pressure on our selling prices. Although we believe that we are well positioned to minimize any such impact on our business, our inability to address the consolidation trend could materially and adversely affect our business and results of operations.

Other initiatives sponsored by government agencies, legislative bodies and the private sector to limit the growth of healthcare costs, including price regulation and competitive pricing, are ongoing in the markets where we do business. We cannot predict what healthcare programs and regulations will ultimately be implemented at the U.S. federal or state level or elsewhere, or the effect of any future legislation or regulation in the U.S. or elsewhere. That said, any changes that lower reimbursements for our products or reduce medical procedure volumes could have a material, adverse effect on our business, financial condition and results of operations. We continue to monitor the implementation of such legislation and, to the extent new market or industry trends or new governmental programs evolve, we will consider implementing or implement programs in response.

Changes in the healthcare industry may require us to decrease the selling price for our products, may reduce the size of the market for our products, or may eliminate a market, any of which could have a negative impact on our financial performance.

Trends toward managed care, healthcare cost containment and other changes in government and private sector initiatives in the U.S. and other countries in which we do business are placing increased emphasis on the delivery of more cost-effective medical therapies that could adversely affect the sale and/or the prices of our products. For example:

- third-party payors of hospital services and hospital outpatient services, including Medicare, Medicaid, private and public health insurers and foreign governmental health systems, annually revise their payment methodologies, which can result in stricter standards for reimbursement of hospital charges for certain medical procedures or the elimination of reimbursement;
- several foreign countries have implemented reforms of their respective healthcare sectors in an effort to reduce healthcare spending, including restricting funding to only those medical technologies and procedures with proven effectiveness, and increasing patient co-payments. Governmental health systems have revised and continue to

consider revisions of healthcare budgets, which could result in stricter standards for implementing certain medical procedures, increased scrutiny of medical devices, and downward pricing pressure;

- Medicare, Medicaid, private and public health insurer and foreign governmental cutbacks could create downward pricing pressure on our products;
- in the U.S., Medicare and Medicaid coverage as well as commercial payor coverage determinations could reduce or eliminate reimbursement or coverage for certain of our wound matrix, amniotic, and advanced wound dressing products as well as other products in most regions, negatively affecting our market for these products, and future determinations could reduce or eliminate reimbursement or coverage for these products in other regions and could reduce or eliminate reimbursement or coverage for other products;

- there has been a consolidation among healthcare facilities and purchasers of medical devices in the U.S., some of whom prefer to limit the number of suppliers from whom they purchase medical products, and these entities may decide to stop purchasing our products or demand discounts on our prices;
- there has been a growing movement of physicians becoming employees of hospitals and other healthcare entities, which aligns surgeon product choices with his or her employers' purchasing decisions, and adds to pricing pressures;
- in the U.S., we are party to contracts with group purchasing organizations, which negotiate pricing for many member hospitals, require us to discount our prices for certain of our products and limit our ability to raise prices for certain of our products, particularly surgical instruments;
- there is economic pressure to contain healthcare costs in domestic and international markets, and, regardless of the consolidation discussed above, providers generally are exploring ways to cut costs by eliminating purchases or driving reductions in the prices that they pay for medical devices, or increasing clinical or economic evidence thresholds for product formularies;
- there are proposed and existing laws, regulations and industry policies in domestic and international markets regulating the sales and marketing practices and the pricing and profitability of companies in the healthcare industry;
- proposed laws or regulations may permit hospitals to provide financial incentives to doctors for reducing hospital costs, will award physician efficiency, and will encourage partnerships with healthcare service and goods providers to reduce prices; and
- there have been initiatives by third-party payors and foreign governmental health systems to challenge the prices charged for medical products that could affect our ability to sell products on a competitive basis.

Any and all of the above factors could materially and adversely affect our levels of revenue and our profitability.

We are subject to stringent domestic and foreign medical device regulation and any adverse regulatory action may adversely affect our financial condition and business operations.

Our products, development activities and manufacturing processes are subject to extensive and rigorous regulation by numerous government agencies, including the FDA and comparable foreign agencies. To varying degrees, each of these agencies monitors and enforces our compliance with laws and regulations governing the development, testing, manufacturing, labeling, marketing and distribution of our medical devices. We are also subject to regulations that may apply to certain of our products that are Drug/Device Combination products or are considered to be subject to pharmaceutical regulations outside the U.S. The process of obtaining marketing approval or clearance from the FDA and comparable foreign regulatory agencies for new products, or for enhancements or modifications to existing products, could

- take a significant amount of time;
- require the expenditure of substantial financial and other resources;
- involve rigorous and expensive pre-clinical and clinical testing, as well as increased post-market surveillance;
- involve modifications, repairs or replacements of our products; and
- result in limitations on the indicated uses of our products.

We cannot be certain that we will receive required approval or clearance from the FDA and foreign regulatory agencies for new products or modifications to existing products on a timely basis. The failure to receive approval or clearance for significant new products or modifications to existing products on a timely basis could have a material, adverse effect on our financial condition and results of operations.

Both before and after a product is commercially released, we have ongoing responsibilities under FDA and foreign regulations. For example, we are required to comply with the FDA's Quality System Regulation, which mandates that manufacturers of medical devices adhere to certain quality assurance requirements pertaining to, among other things, validation of manufacturing processes, controls for purchasing product components, and documentation practices. As another example, the Federal Medical Device Reporting regulation requires us to provide information to the FDA whenever there is evidence that reasonably suggests that a device may have caused or contributed to a death or serious injury or, that a malfunction occurred which would be likely to cause or contribute to a death or serious injury upon recurrence. Compliance with applicable regulatory requirements is subject to continual review and is monitored rigorously through periodic inspections by the FDA, which may result in observations on Form 483, and in some cases warning letters, that require corrective action. If the FDA or equivalent foreign agency were to conclude that we are not in compliance with applicable laws or regulations, or that any of our medical devices are ineffective or pose an

unreasonable health risk, the FDA or equivalent foreign agency could ban such medical devices, detain or seize such medical devices, order a recall, repair, replacement, or refund of such devices, or require us to notify health professionals and others that the devices present unreasonable risks of substantial harm to the public health. Governments are expected to continue to scrutinize the industry closely with inspections, and possibly enforcement actions, by the FDA or equivalent foreign agencies. Additionally, the FDA may restrict manufacturing and impose other operating restrictions, enjoin and restrain certain violations of applicable law pertaining to medical devices, and assess civil or criminal penalties against our officers, employees, or us. The FDA may also recommend prosecution to the Department of Justice. Any

adverse regulatory action, depending on its magnitude, may restrict us from effectively manufacturing, marketing and selling our products and could have a material, adverse effect on our financial condition and results of operations. In addition, negative publicity and product liability claims resulting from any adverse regulatory action could have a material, adverse effect on our financial condition and results of operations.

While we have taken measures to enhance our Quality System, we cannot assure you that future inspections by the FDA and the standards they apply will not result in warning letters for any facility in the future. We are also subject to inspections of our Quality System by regulatory agencies outside the U.S. which could result in the issuance of nonconformance or significant requirements to our Quality System.

The FDA Reauthorization Act of 2017 (“FDARA”), which includes the reauthorization of the Medical Device User Fee Amendments of 2012, as well as other medical device provisions, went into effect October 1, 2017. This includes performance goals and user fees paid to the FDA by medical device companies when they register and list with the FDA and when they submit an application to market a device in the U.S. Under FDARA, this user fee program has been reauthorized through fiscal year 2022. Under the Medical Device User Fee Amendments, or MDUFA III, there are additional requirements regarding the FDA Establishment Registration and Listing of Medical Devices. All U.S. and foreign manufacturers must register and list medical devices for sale in the U.S. All of our facilities comply with these requirements. That said, we also source products from foreign contract manufacturers. From this business practice, it is possible that some of our foreign contract manufacturers will not comply with these requirements and choose not to register with the FDA. In such an event, we will need to determine if there are alternative foreign contract manufacturers who comply with the FDA Establishment Registration requirements. If such a foreign contract manufacturer is a sole supplier of one of our products, there is a risk that we may not be able to source another supplier and our business could be adversely affected.

We are subject to extensive complex regulatory requirements by domestic and foreign government agencies and any failure to comply with our ongoing responsibilities under their applicable laws and regulations could result in a material adverse impact on our business.

In addition, the United States Federal Food, Drug, and Cosmetic Act (“FDCA”) permits device manufacturers to promote products solely for the uses and indications set forth in the approved product labeling. A number of enforcement actions have been taken against manufacturers that promote products for “off-label” uses, including actions alleging that federal health care program reimbursement of products promoted for "off-label" uses are false and fraudulent claims to the government. The failure to comply with “off-label” promotion restrictions can result in significant financial penalties and a required corporate integrity agreement with the federal government imposing significant administrative obligations and costs, and potential evaluation from federal health care programs.

Foreign governmental regulations have become more stringent and we may become subject to even more rigorous regulation by foreign governmental authorities in the future, which could have a material, adverse effect on our business, financial condition and results of operations. Penalties for a company's noncompliance with foreign governmental regulation could be severe, including revocation or suspension of a company's business license and criminal sanctions. For example, we are subject to Good Manufacturing Practice regulations for Pharmaceuticals in the EU for certain of our products. These regulations also mandate that manufacturers of medical devices (or those that are considered pharmaceuticals) adhere to certain quality assurance requirements pertaining to, among other things, validation of manufacturing processes, controls for purchasing product components, and documentation practices. There may be additional regulations if such products are considered pharmaceuticals outside the U.S.

In addition, the new European Medical Device Regulation (“EU MDR”) passed in the European Parliament on April 5, 2017 and went into effect on May 25, 2017, replacing the Medical Device Directive. The EU MDR is an extensive reform of the rules that govern the medical device industry in Europe. Under this regulation, manufacturers will have three (3) years to comply with a broad set of new rules for almost every kind of medical device. The EU MDR will require changes in the clinical evidence required for medical devices, post-market clinical follow-up evidence, annual reporting of safety information for Class III products, and bi-annual reporting for Class II products, Unique Device Identification (“UDI”) for all products, submission of core data elements to a European UDI database prior to placement of a device on the market, reclassification of medical devices, and multiple other labeling changes.

Under the new EU MDR rules, medical device companies will have to, among other things. do the following:

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provide significantly more clinical evidence to get new products to market and even to keep existing products on the market;

- make changes to product labeling and make certain product data available to the public; and
- conduct product portfolio assessments to determine the impact of the EU MDR on the Company's margins.

Overall, medical device companies can expect longer lead times to obtain product registrations (CE Mark Certification) in the EU and a substantially costlier pathway to compliance in the EU. We are not yet able to determine the costs of complying with these regulations, how the EU will interpret and enforce them, what the timelines for approvals of products will be and the overall

effect of the EU MDR on the marketplace. Given the significant additional pre-market and post-market requirements imposed by the EU MDR, the overall impact of these new rules could have a material, adverse effect on the Company's revenues and expenses.

Certain of our products contain materials derived from animal sources and may become subject to additional regulation.

Certain of our products, including our dermal regeneration products, duraplasty products, wound care products, bone void fillers, nerve and tendon repair products and certain other products, contain material derived from bovine tissue. In 2018, approximately 37% of our revenues derived from products containing material derived from bovine tissue. Products that contain materials derived from animal sources, including food, pharmaceuticals and medical devices, are subject to scrutiny in the media and by regulatory authorities. Regulatory authorities are concerned about the potential for the transmission of disease from animals to humans via those materials. This public scrutiny has been particularly acute in Japan and Western Europe with respect to products derived from animal sources, because of concern that materials infected with the agent that causes bovine spongiform encephalopathy, otherwise known as BSE or mad cow disease, may, if ingested or implanted, cause a variant of the human Creutzfeldt-Jakob Disease, an ultimately fatal disease with no known cure. The World Organization for Animal Health ("OIE") recognizes the U.S. as having a negligible risk for BSE, which is the highest status available.

We take care to provide that our products are safe and free of agents that can cause disease. In particular, we qualified a source of collagen from a country outside the U.S. that is considered BSE/TSE-free. The World Health Organization classifies different types of bovine tissue for relative risk of BSE transmission. Deep flexor tendon and bovine fetal skin, which are used in our products, are in the lowest-risk categories for BSE transmission and are therefore considered to have a negligible risk of containing the agent that causes BSE (an improperly folded protein known as a prion). Nevertheless, products that contain materials derived from animals, including our products, could become subject to additional regulation, or even be banned in certain countries, because of concern over the potential for the transmission of prions. Significant new regulation, or a ban of our products, could have a material, adverse effect on our current business or our ability to expand our business.

Certain countries, such as Japan, China, Taiwan and Argentina, have issued regulations that require our collagen products be sourced from countries where no cases of BSE have occurred, and the EU has requested that our dural replacement products and other products that are used in neurological tissue be sourced from a country where no cases of BSE have occurred. Currently, we source bovine fetal hides from the U.S. and purchase tendon from the U.S. and New Zealand. New Zealand has never had a case of BSE. We received approval in the U.S., the EU, Japan, Taiwan, China, Argentina as well as other countries for the use of New Zealand-sourced tendon in the manufacturing of our products. If we cannot continue to use or qualify a source of tendon from New Zealand or another country that has never had a case of BSE, we could be prohibited from selling our collagen products in certain countries.

Certain of our products are derived from human tissue and are subject to additional regulations and requirements.

We manufacture and distribute products derived from human tissue. The FDA has specific regulations governing human cells, tissues and cellular and tissue-based products, or HCT/Ps. An HCT/P is a product containing or consisting of human cells or tissue intended for transplantation into a human patient. Examples include bone, ligament, skin, amniotic tissue and cornea. HCT/Ps that meet the criteria for regulation solely under Section 361 of the Public Health Service Act ("Section 361") are not subject to any premarket clearance or approval requirements but are subject to post-market regulatory requirements.

Some HCT/Ps also meet the definition of a biological product, medical device or drug regulated under the FDCA. These biologic, device or drug HCT/Ps must comply both with the requirements exclusively applicable to Section 361 HCT/Ps and, in addition, with requirements applicable to biologics, devices or drugs, including premarket clearance or approval.

On June 22, 2015, the FDA issued an Untitled Letter alleging that BioD's morselized amniotic membrane tissue based products do not meet the criteria for regulation as HCT/Ps solely under Section 361 and that, as a result, BioD would need a biologics license to lawfully market those morselized products. Since the issuance of the Untitled Letter, BioD and more recently the Company have been in discussions with the FDA to communicate their disagreement with the FDA's assertion that certain products are more than minimally manipulated. The FDA has not changed its position that certain of the BioD acquired products are not eligible for marketing solely under Section 361.

In November 2017, the FDA issued the final guidance document related to human tissue titled, “Regulatory Considerations for Human Cells, Tissues, and Cellular and Tissue-Based Products: Minimal Manipulation and Homologous Use” (the “HCT/P Final Guidance”). The HCT/P Final Guidance maintains the FDA’s position that products such as the Company’s morselized amniotic membrane tissue-based products do not meet the criteria for regulation solely as HCT/Ps. In addition, the FDA articulated a risk-based approach to enforcement and, while some uses for amniotic membrane tissue-based products would enjoy as much as thirty-six months of enforcement discretion, other high risk uses could be subject to immediate enforcement action. The Company does not believe the uses for its amniotic membrane tissue-based products fall into the high risk-category. Nonetheless, we can make no assurances that the FDA will continue to exercise its enforcement discretion with respect to the Company’s amniotic membrane tissue-based products, and any potential action of the FDA could have a financial impact regarding the sales of such products. The Company has been considering and continues to consider regulatory approval pathways for its amniotic membrane

tissue-based products. Revenues from BioD morselized amniotic material-based products for the year ended December 31, 2018 was less than 1% of consolidated revenues.

Lack of market acceptance for our products or market preference for technologies that compete with our products could reduce our revenues and profitability.

We cannot be certain that our current products or any other products that we develop or market will achieve or maintain market acceptance. Certain of the medical indications that our devices can treat can also be treated by other medical devices or by medical practices that do not include a device. The medical community widely accepts many alternative treatments, and certain of these other treatments have a long history of use. For example, the use of autograft tissue is a well-established means for repairing the dermis, and it competes for acceptance in the market with our collagen-based wound care products.

We cannot be certain that our new devices and procedures will be able to replace those established treatments or that physicians, the medical community or third-party payors, including Medicare, Medicaid, private and public health insurers and foreign governmental health systems, will accept and utilize our devices or any other medical products that we may develop. For example, greater market acceptance of our wound graft products may ultimately depend on our ability to demonstrate that higher rates of reimbursement are justified because they are an attractive and cost-effective alternative to other treatment options. Additionally, if there are negative events in the industry, whether real or perceived, there could be a negative impact on the industry as a whole.

In addition, our future success depends, in part, on our ability to license and develop additional products. Even if we determine that a product candidate has medical benefits, the cost of commercializing that product candidate, either through internal development or payments associated with licensing arrangements, could be too high to justify development. Competitors could develop products that are more effective, achieve or maintain more favorable reimbursement status from third-party payors both domestically and internationally, including Medicare, Medicaid, private and public health insurers, and foreign governmental health systems, cost less or are ready for commercial introduction before our products. If we are unable to develop additional commercially viable products, our future prospects could be materially and adversely affected.

Market acceptance of our products depends on many factors, including our ability to convince prospective collaborators and customers that our technology is an attractive alternative to other technologies, to manufacture products in sufficient quantities and at acceptable costs, and to supply and service sufficient quantities of our products directly or through our distribution alliances. In addition, unfavorable reimbursement methodologies, or adverse determinations of third-party payors, including Medicare, Medicaid, private and public health insurers, and foreign governmental health systems, regarding our products or third-party determinations that favor a competitor’s product over ours, could harm acceptance or continued use of our products. The industry is subject to rapid and continuous change arising from, among other things, consolidation, technological improvements, the pressure on governments, third-party payors and providers to reduce healthcare costs, and healthcare reform legislation and initiatives domestically and internationally. One or more of these factors could vary unpredictably, and such variations could have a material, adverse effect on our competitive position. We may not be able to adjust our contemplated plan of development to meet changing market demands.

Economic and political instability around the world could adversely affect the ability of hospitals, other customers, suppliers and distributors to access funds or otherwise have available liquidity, which could reduce orders for our products or interrupt our production or distribution or result in a reduction in elective and non-reimbursed operative procedures.

Economic and political instability around the world could adversely affect the ability of hospitals and other customers to access funds to enable them to fund their operating and capital budgets. As a result, hospitals and other customers could reduce budgets or put all or part of their budgets on hold or close their operations, which could have a negative effect on our sales, particularly the sales of capital equipment such as our ultrasonic surgical aspirators, neuromonitors and stereotactic products, or result in a reduction in elective and non-reimbursed procedures. The occurrence of those economic conditions could make it more difficult for us to accurately forecast and plan our future business activities and depending on their severity, could have a material, adverse effect on our business, financial condition and results of operations.

We may have additional tax liabilities.

We are subject to income taxes in the U.S. and many foreign jurisdictions and are commonly audited by various tax authorities. In the ordinary course of our business, there are many transactions and calculations where the ultimate tax determination is uncertain. Significant judgment is required in determining our worldwide provision for income taxes. Although we believe that our tax estimates are reasonable, the final determination of tax audits and any related litigation could be materially different from our historical income tax provisions and accruals. The results of an audit or litigation could have a material, adverse effect on our financial statements in the period or periods for which that determination is made.

Our leverage and debt service obligations could adversely affect our business.

As of December 31, 2018, our total consolidated external debt was approximately $1.4 billion. (See Item 7 for a discussion of our consolidated external debt.) We may also incur additional indebtedness in the future. Our substantial indebtedness could have material, adverse consequences, including:

- making it more difficult for us to satisfy our financial obligations;
- increasing our vulnerability to adverse economic, regulatory and industry conditions, and placing us at a disadvantage compared to our competitors that are less leveraged;
- limiting our ability to compete and our flexibility in planning for, or reacting to, changes in our business and the industry in which we operate; and
- limiting our ability to borrow additional funds for working capital, capital expenditures, acquisitions and general corporate or other purposes.

Our debt service obligations will require us to use a portion of our operating cash flow to pay interest and principal on indebtedness instead of for other corporate purposes, including funding future expansion of our business, acquisitions, and ongoing capital expenditures, which could impede our growth. In addition, the Company may attempt to refinance or extend this obligation depending on prevailing market conditions. Our ability to refinance or extend this obligation will depend on our operating and financial performance, which in turn is subject to prevailing economic conditions and financial, business and other factors beyond our control. Any disruptions in our operations, the financial markets, or overall economy may adversely affect the availability and cost of credit to us.

It could be difficult to replace some of our suppliers.

Outside vendors, some of whom are sole-source suppliers, provide key components and raw materials used in the manufacture of our products. Although we believe that alternative sources for many of these components and raw materials are available, any interruption in supply of a limited or sole-source component or raw material could harm our ability to manufacture our products until a new or alternative source of supply is identified and qualified. In addition, an uncorrected defect or supplier's variation in a component or raw material, either unknown to us or incompatible with our manufacturing process, could harm our ability to manufacture products. We may not be able to find a sufficient alternative supplier in a reasonable time period, or on commercially reasonable terms, if at all, and our ability to produce and supply our products could be impaired. We believe that these factors are most likely to affect the following products that we manufacture:

- our collagen-based products, such as the Integra Dermal Regeneration Template and wound matrix products, the DuraGen® family of products, our Absorbable Collagen Sponges, Primatrix and SurgiMend products;
- our products made from silicone, such as our neurosurgical shunts and drainage systems and hemodynamic shunts;
- products which use many different specialty parts from numerous suppliers, such as our intracranial monitors, catheters and headlights;
- products that use pyrolytic carbon (i.e., PyroCarbon) technology, such as certain of our reconstructive extremity orthopedic implants;
- products which are amniotic tissue based;
- products that use medical grade leptospermum honey, such as our Medihoney products; and
- our TCC-EZ® total contact cast system products.

In connection with our Confluent Surgical acquisition in January 2014, we entered into a multi-year supply agreement with an affiliate of the seller to continue to manufacture the acquired surgical sealant and adhesion barrier product lines. Pursuant to a contract we entered in 2015, we transferred manufacturing of these product lines to a third party in 2018.

If we were suddenly unable to purchase products or services from one or more of the companies identified above, we would need a significant period of time to qualify a replacement, and the production of any affected products could be disrupted, which could have a material, adverse effect on our financial condition and business operations.

While it is our policy to maintain sufficient inventory of components so that our production will not be significantly disrupted even if a particular component or material is not available for a period of time, we remain at risk that we will not be able to qualify new components or materials quickly enough to prevent a disruption if one or more of our suppliers ceases production of important components or materials.

Our intellectual property rights may not provide meaningful commercial protection for our products, potentially enabling third parties to use our technology or very similar technology and could reduce our ability to compete in the market.

To compete effectively, we depend, in part, on our ability to maintain the proprietary nature of our technologies and manufacturing processes, which includes the ability to obtain, protect and enforce patents on our technology and to protect our trade secrets. We own or have licensed patents that cover aspects of some of our product lines. Our patents, however, may not provide us with any significant competitive advantage. Others may challenge our patents and, as a result, our patents could be narrowed, invalidated or rendered unenforceable. Competitors may develop products similar to ours that our patents do not cover. In addition, the approval or rejection of patent applications may take several years and our current and future patent applications may not result in the issuance of patents in the U.S. or foreign countries.

Our competitive position depends, in part, upon unpatented trade secrets, which we may be unable to protect.

Our competitive position also depends upon unpatented trade secrets, which are difficult to protect. We cannot assure you that others will not independently develop substantially equivalent proprietary information and techniques or otherwise gain access to our trade secrets, that our trade secrets will not be disclosed or that we can effectively protect our rights to unpatented trade secrets.

In an effort to protect our trade secrets, we require our employees, consultants and advisors to execute confidentiality and invention assignment agreements upon commencement of employment or consulting relationships with us. These agreements provide that, except in specified circumstances, all confidential information developed or made known to the individual during the course of their relationships with us must be kept confidential. We cannot assure you, however, that these agreements will provide meaningful protection for our trade secrets or other proprietary information in the event of the unauthorized use or disclosure of confidential information.

Our success will depend partly on our ability to operate without infringing or misappropriating the proprietary rights of others.

We may be sued for infringing the intellectual property rights of others. In addition, we may find it necessary, if threatened, to initiate a lawsuit seeking a declaration from a court that we do not infringe the proprietary rights of others or that their rights are invalid or unenforceable. If we do not prevail in any litigation, in addition to any damages we might have to pay, we would be required to stop the infringing activity (which could include a cessation of selling the products in question) or obtain a license for the proprietary rights involved. Any required license may be unavailable to us on acceptable terms, if at all. In addition, some licenses may be nonexclusive and allow our competitors to access the same technology we license.

If we fail to obtain a required license or are unable to design our products so as not to infringe on the proprietary rights of others, we may be unable to sell some of our products, and this potential inability could have a material, adverse effect on our revenues and profitability.

We may be involved in lawsuits relating to our intellectual property rights and promotional practices, which may be expensive.

To protect or enforce our intellectual property rights, we may have to initiate or defend legal proceedings, such as infringement suits or opposition proceedings, against or by third parties. In addition, we may have to institute proceedings regarding our competitors’ promotional practices or defend proceedings regarding our promotional practices. Legal proceedings are costly, and, even if we prevail, the cost of the legal proceedings could affect our profitability. In addition, litigation is time-consuming and could divert management's attention and resources away from our business. Moreover, in response to our claims against other parties, those parties could assert counterclaims against us.

If we do not successfully integrate newly acquired businesses into our business operations, including Codman Neurosurgery, our business could be materially and adversely affected.

We will need to successfully integrate the operations of recently and pending acquired businesses, including our acquisition of Codman Neurosurgery, with our business operations. The failure to integrate the business operations of the acquired businesses successfully would have a material, adverse effect on our business, financial condition and results of operations. As a result of these acquisitions, we will undergo substantial changes in a short period of time and our business will change and broaden in size and the scope of products we offer. Integrating the operations of multiple new businesses with that of our own is a complex, costly and time-consuming process, which requires significant management attention and resources, including the coordination of information technologies, sales and marketing, research and development, operations, manufacturing and finance functions. The integration process could

disrupt the businesses and, if implemented ineffectively, could preclude realization of the full benefits that we expect from these transactions. Our failure to meet the challenges involved in integrating the businesses in order to realize the anticipated benefits of the acquisitions could cause an interruption of, or a loss of momentum in, our activities and could materially and adversely affect our results of operations. Prior to each acquisition, the acquired business operated independently, with its own business, corporate culture, locations, employees and systems. There may be substantial difficulties, costs and delays involved in any integration of other businesses with that of our own. These may include:

- distracting management from day-to-day operations;
- potential incompatibility of corporate cultures;
- an inability to achieve synergies as planned;

- risks associated with the assumption of contingent or other liabilities of acquisition targets;
- adverse effects on existing business relationships with suppliers or customers, including failure to retain key customers and suppliers;
- failure to retain key employees of our company and of the acquired businesses;
- inheriting and uncovering previously unknown issues, problems and costs from the acquired company;
- delays between our expenditures to acquire new products, technologies or businesses and the generation of revenues from those acquired products, technologies or businesses;
- realization of assets and settlement of liabilities at amounts equal to estimated fair value as of the acquisition date of any acquisition or disposition;
- an inability to integrate information technology systems of acquired businesses in a secure and reliable manner;
- costs and delays in implementing common systems and procedures (including technology, compliance programs, financial systems, distribution and general business operations, among others);
- liabilities that are significantly larger than we currently anticipate and unforeseen increased expenses or delays associated with the acquisitions, including transition costs to integrate the businesses that may exceed the costs that we currently anticipate;
- challenges involved with the increased scale of our operations resulting from the acquisitions; and
- increased difficulties in managing our business due to the addition of international locations.

These risks may be heightened in cases where the majority of the former businesses' operations, employees and customers are located outside the U.S. Any one or all of these factors could increase operating costs or lower anticipated financial performance. Many of these factors are also outside of our control. In addition, dispositions of certain key products, technologies and other rights, including pursuant to conditions imposed on us to obtain regulatory approvals, may affect our business operations.

In connection with the acquisition of the Codman Neurosurgery business from Johnson & Johnson, we entered into certain transition services agreements with Johnson & Johnson under which they are providing certain manufacturing, distribution and other services to the Company. While we have transitioned off of certain of the transition services, any interruption in, or inability of Johnson & Johnson to provide, these services for any reason could have a material, adverse effect on our business, financial condition and results of operations.

Even if the operations of the businesses are integrated successfully, we may not realize the full benefits of the acquisition, including the synergies, cost savings or sales or growth opportunities that we expect. These benefits may not be achieved within the anticipated time frame, or at all. Additional unanticipated costs could be incurred in the integration of the businesses. All of these factors could cause a reduction to our earnings per share, decrease or delay the expected accretive effect of the transaction, and negatively impact the price of our ordinary shares.

If any of our facilities were damaged and/or our manufacturing or business processes interrupted, we could experience lost revenues and our business could be seriously harmed.

Damage to our manufacturing, distribution, development and/or research facilities because of fire, extreme weather conditions, natural disaster, power loss, communications failure, unauthorized entry or other events, such as a flu or other health epidemic, could significantly disrupt our operations, the operations of suppliers and critical infrastructure and delay or prevent product manufacture and shipment during the time required to repair, rebuild or replace the damaged facilities. Certain of our manufacturing facilities are located in Puerto Rico, which in the past has experienced both severe earthquakes and other natural disasters. We believe the risk associated with operating a manufacturing plant in Puerto Rico, post Hurricane Maria, has returned to historical levels. While there are still some challenges with the energy system and service is occasionally disrupted for short periods, it has not impacted operations primarily due to the generator capacity at the plant. Although we maintain property damage and business interruption insurance coverage on these facilities, our insurance might not cover all losses under such circumstances, and we may not be able to renew or obtain such insurance in the future on acceptable terms with adequate coverage or at reasonable costs.

In addition, certain of our surgical instruments have some manufacturing processes performed by third parties in Pakistan, and we purchase a much smaller amount of instruments directly from vendors there. Pakistan is subject to political instability and unrest. Such instability could interrupt our ability to sell surgical instruments to our customers

and could have a material, adverse effect on our revenues and earnings. While we have developed a relationship with an alternative provider of these services in another country, and continue to work to develop other providers in other countries, we cannot guarantee that we will be completely successful in establishing all of these relationships. Even if we are successful in establishing all of these alternative relationships, we cannot guarantee that we will be able to do so at the same level of costs or that we will be able to pass along additional costs to our customers.

Further, we manufacture certain products in Europe and our European headquarters is located in France, which has experienced labor strikes and acts of terrorism. Thus far, strikes and acts of terrorism have not had a material impact on our business; however, if either were to occur, there is no assurance that they would not disrupt our business, and any such disruption could have a material, adverse effect on our business.

An experienced third-party hosts and maintains the enterprise business system used to support certain of our transaction processing for accounting and financial reporting, supply chain and manufacturing. Currently, we have developed a comprehensive disaster recovery plan for the Company's infrastructure. As we have not fully tested the plan, we have adopted alternative solutions to mitigate business risk, including backup equipment, power and communications. We also implemented a comprehensive backup and recovery process for our key applications. Our global production and distribution operations are dependent on the effective management of information flow between facilities. An interruption of the support provided by our enterprise business systems could have a material, adverse effect on the business.

We may experience difficulties, delays, performance impact or unexpected costs from consolidation of facilities.

We consolidated several facilities in recent years and may further consolidate our operations in the future in order to improve our cost structure, achieve increased operating efficiencies, and improve our competitive standing or results of operations and/or to address unfavorable economic conditions. As part of these initiatives, we may also lose favorable tax incentives or not be able to renew leases on acceptable terms. We may further reduce staff, make changes to certain capital projects, close certain production operations and abandon leases for certain facilities that will not be used in our operations. In conjunction with any actions, we will continue to make significant investments and build the framework for our future growth. We may not realize, in full or in part, the anticipated benefits and savings from these efforts because of unforeseen difficulties, delays, implementation issues or unexpected costs. If we are unable to achieve or maintain all of the resulting savings or benefits to our business or other unforeseen events occur, our business and results of operations may be adversely affected.

We are exposed to a variety of risks relating to our international sales and operations.

We generate significant revenues outside the U.S. in multiple foreign currencies, and in U.S. dollar-denominated transactions conducted with customers who generate revenue in currencies other than the U.S. dollar. For those foreign customers who purchase our products in U.S. dollars, currency fluctuations between the U.S. dollar and the currencies in which those customers do business may have a negative impact on the demand for our products in foreign countries where the U.S. dollar has increased in value compared to the local currency.

Since we have operations based outside the U.S. and we generate revenues and incur operating expenses in multiple foreign currencies, we experience currency exchange risk with respect to those foreign currency-denominated revenues and expenses. Our most significant currency exchange risk relates to transactions conducted in Australian dollars, British pounds, Canadian dollars, Chinese yuan, euros, Japanese yen, and Swiss francs.

We cannot predict the consolidated effects of exchange rate fluctuations upon our future operating results because of the number of currencies involved, the variability of currency exposure and the potential volatility of currency exchange rates. Although we address currency risk management through regular operating and financing activities, and, on a limited basis, through the use of derivative financial instruments, those actions may not prove to be fully effective. For a description of our use of derivative financial instruments, see Note 6, Derivative Instruments in our consolidated financial statements.

Our international operations subject us to laws regarding sanctioned countries, entities and persons, customs, import-export, laws regarding transactions in foreign countries, the U.S. Foreign Corrupt Practices Act and local anti-bribery and other laws regarding interactions with healthcare professionals, and product registration requirements. Among other things, these laws restrict, and in some cases prevent, U.S. companies from directly or indirectly selling goods, technology or services to people or entities in certain countries. In addition, these laws require that we exercise care in structuring our sales and marketing practices and effecting product registrations in foreign countries.

On June 23, 2016, the United Kingdom (UK) held a referendum in which voters approved an exit from the EU, commonly referred to as "Brexit." As a result of the referendum, the British government began negotiating the terms of the UK's future relationship with the EU. Until the terms of the UK's exit from the EU on March 29, 2019 are determined, including any transition period, it is difficult to predict its impact. It is possible that the withdrawal could, among other things, affect the legal and regulatory environments to which our business is subject, impose greater restrictions on imports and exports between the UK and the EU and other parties, and create economic and political uncertainty in the region.

From time to time, proposals are made to significantly change existing trade agreements and relationships between the U.S. and other countries. Recently, the U.S. and China have imposed tariffs on products imported into their respective

countries. While we currently do not anticipate that these tariffs will have a material impact on our business, the list of items subject to these tariffs could change and it is possible that they could adversely impact our supply chain costs or our ability to sell certain of our products in China. More generally, additional tariffs or other trade barriers imposed by the U.S. or other countries could materially and adversely affect our operations and financial results.

Oversight of the medical device industry might affect the manner in which we may sell medical devices and compete in the marketplace.

There are laws and regulations that govern the means by which companies in the healthcare industry may market their products to healthcare professionals and may compete by discounting the prices of their products, including for example, the federal Anti-

Kickback Statute, the federal False Claims Act, the federal Health Insurance Portability and Accountability Act of 1996, state law equivalents to these federal laws that are meant to protect against fraud and abuse and analogous laws in foreign countries. Violations of these laws are punishable by criminal and civil sanctions, including, but not limited to, in some instances civil and criminal penalties, damages, fines, exclusion from participation in federal and state healthcare programs, including Medicare and Medicaid. Although we exercise care in structuring our sales and marketing practices and customer discount arrangements to comply with those laws and regulations, we cannot assure that:

- government officials charged with responsibility for enforcing those laws will not assert that our sales and marketing practices or customer discount arrangements are in violation of those laws or regulations; or
- government regulators or courts will interpret those laws or regulations in a manner consistent with our interpretation.

Correspondingly, federal and state laws are also sometimes open to interpretation, and from time to time we may find ourselves at a competitive disadvantage if our interpretation differs from that of our competitors. AdvaMed (for the U.S. and China), MedTech Europe (Europe), Mecomed (Middle East), and APACMed (Asia Pacific), some of the principal trade associations for the medical device industry, promulgate model codes of ethics that set forth standards by which its members should (and non-member companies may) abide in the promotion of their products. We have in place policies and procedures for compliance that we believe are at least as stringent as those set forth in the AdvaMed Code, and we regularly train our sales and marketing personnel on our policies regarding sales and marketing practices. Pursuant to the AdvaMed Code, we have certified our adoption of the AdvaMed Code. Nevertheless, the sales and marketing practices of our industry have been the subject of increased scrutiny from federal and state government agencies, and we believe that this trend will continue. Various hospital organizations, medical societies and trade associations are establishing their own practices that may require detailed disclosures of relationships between healthcare professionals and medical device companies or ban or restrict certain marketing and sales practices such as gifts and business meals.

Our private-label product lines depend significantly on key relationships with third parties, which we could be unable to establish and maintain.

Our private-label business depends in part on our entering into and maintaining long-term supply agreements with third parties. The third parties with whom we have entered into agreements might terminate these agreements for a variety of reasons, including developing other sources for the products that we supply. Termination of our most important relationships could adversely affect our expectations for the growth of private-label products.

We may have significant product liability exposure and our insurance may not cover all potential claims.

We are exposed to product liability and other claims if our technologies or products are alleged to have caused harm. We may not be able to obtain insurance for the potential liability on acceptable terms with adequate coverage or at reasonable costs. Any potential product liability claims could exceed the amount of our insurance coverage or may be excluded from coverage under the terms of the policy. Our insurance may not be renewed at a cost and level of coverage comparable to that then in effect.

We are subject to requirements relating to hazardous materials which may impose significant compliance or other costs on us.

Our manufacturing, product development, research, and development operations and processes involve the controlled use of certain hazardous materials. In addition, we own and/or lease a number of facilities at which hazardous materials have been used in the past. Finally, we have acquired various companies that historically have used certain hazardous materials and that have owned and/or leased facilities at which hazardous materials have been used. For all of these reasons, we are subject to federal, state, foreign, and local laws and regulations governing the use, manufacture, storage, transportation, handling, treatment, remediation, and disposal of hazardous materials and certain waste products (“Environmental, Health, Safety and Transportation Laws”). Although we believe that our procedures for handling, transporting, and disposing of hazardous materials comply with the Environmental, Health, Safety and Transportation Laws, the Environmental Health, Safety and Transportation Laws may be amended in ways that increase our cost of compliance, perhaps materially.

Furthermore, the potential risk of accidental contamination or injury from these materials cannot be eliminated, and there is also a risk that such contamination previously has occurred in connection with one of our facilities or in connection with one of the companies we have purchased. In the event of such an accident or contamination, we could

be held liable for any damages that result and any related liability could exceed the limits or fall outside the coverage of our insurance and could exceed our resources. We may not be able to maintain insurance on acceptable terms or at all.

Cyber-attacks or other disruptions to our information technology systems could adversely affect our business.

We are increasingly dependent on sophisticated information technology for our infrastructure and to support business decisions. As a result of technology initiatives, recently enacted regulations, changes in our system platforms and integration of new business acquisitions, we have been consolidating and integrating our systems. Our information systems require an ongoing commitment of significant resources to maintain, protect, and enhance existing systems and develop new systems to keep pace with continuing changes in information processing technology, evolving systems and regulatory standards, the increasing need to protect patient

and customer information, and changing customer patterns. Any significant breakdown, intrusion, interruption, corruption, or destruction of these systems, as well as any data breaches, could have a material, adverse effect on our business.

In addition, third parties may attempt to breach our systems and may obtain data relating to patients, the Company's proprietary information, or other sensitive data. If we fail to maintain or protect our information systems and data integrity effectively, we could lose existing customers, have difficulty attracting new customers, suffer backlash from negative public relations, have problems in determining product cost estimates and establishing appropriate pricing, have difficulty preventing, detecting, and controlling fraud, have disputes with customers, physicians, and other health care professionals, have regulatory sanctions or penalties imposed, have increases in operating expenses, incur expenses or lose revenues as a result of a data privacy breach, or suffer other adverse consequences.

We have programs, processes and technologies in place to prevent, detect, contain, respond to and mitigate security related threats and potential incidents. We undertake considerable ongoing improvements to our systems, connected devices and information-sharing products in order to minimize vulnerabilities, in accordance with industry and regulatory standards. Because the techniques used to obtain unauthorized access change frequently and can be difficult to detect, anticipating, identifying or preventing these intrusions or mitigating them if and when they occur, may be challenging.

We also rely on third party vendors to supply and/or support certain aspects of our information technology systems. Third party systems may contain defects in design or manufacture or other problems that could result in system disruption or unexpectedly compromise the information security of our own systems, and we are dependent on these third parties to provide reliable systems and software and to deploy appropriate security programs to protect their systems.

In addition, we continue to grow in part through new business acquisitions. As a result of acquisitions, we may face risks due to implementation, modification, or remediation of controls, procedures, and policies relating to data privacy and cybersecurity at the acquired business. We continue to consolidate and integrate the number of systems we operate, and to upgrade and expand our information system capabilities for stable and secure business operations.

If we are unable to maintain reliable information technology systems and prevent disruptions, outages, or data breaches, we may suffer regulatory consequences in addition to business consequences. Our worldwide operations mean that we are subject to laws and regulations, including data protection and cyber security laws and regulations, in many jurisdictions. The variety of U.S. and international privacy and cybersecurity laws and regulations impacting our operations are described in "Item 1. Business - Government Regulation - Other Factors - Data Privacy and Cybersecurity Laws and Regulations." We have programs to ensure compliance with such laws and regulations. However, there is no guarantee that we will avoid enforcement actions by governmental bodies. Enforcement actions may be costly and interrupt regular operations of our business. In addition, there has been a developing trend of civil lawsuits and class actions relating to breaches of consumer data held by large companies or incidents arising from other cyber-attacks. While Integra has not been named in any such suits, if a substantial breach or loss of data were to occur, we could become a target of such litigation.

Changes in the calculation and or complete replacement of LIBOR could have an impact on our business.

The United Kingdom's Financial Conduct Authority, which regulates LIBOR, announced in July 2017 that it will no longer persuade or require banks to submit rates for LIBOR after 2021. This announcement and global financial benchmark reforms generally have resulted in the future of certain interest rate benchmarks being more uncertain. There is a chance that LIBOR may be disrupted, materially change, or no longer be published in the future. Currently, there is no definitive information regarding the future of LIBOR or a replacement rate. We have multiple debt facilities which bear interest at a variable rate equal to the Eurodollar LIBOR rate in effect from time to time. A change or transition away from LIBOR as a common reference rate in the global financial market could have a material, adverse effect on our business. Management continues to monitor the status and discussions regarding LIBOR.

ITEM 1B. UNRESOLVED STAFF COMMENTS

As of the filing of this Annual Report on Form 10-K, we had no unresolved comments from the staff of the Securities and Exchange Commission that were received not less than 180 days before the end of our 2018 fiscal year.

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ITEM 2. PROPERTIES

Our principal executive offices are located in Plainsboro, New Jersey. Our principal manufacturing and research facilities are located in New Jersey, Ohio, Pennsylvania, Massachusetts, Tennessee, Canada, France, Germany, Ireland, Switzerland, and Puerto Rico. Our instrument procurement operations are located in Germany. Our primary distribution centers are located in Nevada, Ohio, Pennsylvania, Kentucky, Australia, Belgium, Canada and France. In addition, we lease several smaller facilities to support additional administrative, assembly, and distribution operations. Third parties own and operate the facilities in Nevada, Kentucky and Belgium. We own our facilities in Biot, France, Saint Aubin Le Monial, France, Rietheim-Weilheim, Germany, Ohio, and Pennsylvania and we lease all of our other facilities. We also have repair centers in California, Massachusetts, Ohio, Australia and Germany.

Our manufacturing facilities are registered with the FDA. Our facilities are subject to FDA inspection to ensure compliance with Quality System regulations. For further information regarding the status of FDA inspections, see the "Government Regulation" and "Management's Discussion and Analysis of Financial Condition and Results of Operations - Update on Remediation Activities" sections in this Form 10-K.

ITEM 3. LEGAL PROCEEDINGS

Various lawsuits, claims and proceedings are pending or have been settled by us; the most significant of which are described below.

The Company is subject to various claims, lawsuits and proceedings in the ordinary course of the Company's business, including claims by current or former employees, distributors and competitors and with respect to its products and product liability claims, lawsuits and proceedings, some of which have been settled by the Company. In the opinion of management, such claims are either adequately covered by insurance or otherwise indemnified, or are not expected, individually or in the aggregate, to result in a material, adverse effect on our financial condition. However, it is possible that the Company's results of operations, financial position and cash flows in a particular period could be materially affected by these contingencies.

TEI

TEI, acquired by Integra on July 17, 2015, manufactures a bovine-derived surgical mesh product for Boston Scientific Corporation ("BSC") and has been named as a defendant in lawsuits under a broad range of products liability theories, many of which have not been served on TEI. As of January 14, 2019, only one active case remained against TEI. Pursuant to an indemnification agreement with BSC (i) BSC is managing the litigation; and (ii) TEI has in place a product liability insurance policy, of which it must exhaust $3.0 million before BSC’s indemnity begins to cover relevant claims (and of which only a small portion has been utilized to date and against which the insurer has reserved the entire $3.0 million). In addition, Integra has certain protections in the merger agreements with TEI which would indemnify it for approximately $30.0 million for the first fifteen months after closing and between $20.0 and $30.0 million for the remainder of the three-year period after closing for losses relating to a variety of matters, including half of certain products liability claims (including those related to the product it manufactures for BSC) not covered by insurance. As of December 31, 2018, no indemnification payments were received nor owed in relation to the lawsuits.

BioD

On April 7, 2017, the Company's indirect wholly-owned subsidiary, BioD filed an action in the Superior Court of New Jersey, Chancery Division, Middlesex County seeking a declaration that the resignation of Russell Olsen, the former CEO of BioD, was “for Good Reason” (as defined in Olsen’s employment agreement); a finding that Olsen breached the implied covenant of good faith and fair dealing, committed legal fraud, equitable fraud and negligent misrepresentation; and an award of damages for such actions, including a return of severance fees paid to Olsen. BioD was acquired in August 2016 by Derma Sciences, which Integra subsequently acquired in February 2017. After receiving a job offer from Integra that Olsen believed materially diminished his title and authority, on February 24, 2017 Olsen indicated his intention to terminate his position with BioD for Good Reason, as otherwise permitted by his employment agreement with BioD. Shortly thereafter, Cynthia Weatherly (as representative of the former equity owners of BioD) claimed in a letter to Derma Sciences that Olsen’s resignation was a “termination Without Cause” (as also defined in Olsen’s employment agreement), which would arguably trigger an acceleration of the earn out under a merger agreement between Derma Sciences, BioD and other parties (the "BioD Merger Agreement"), which was entered into in July 2016, and require as a result of the acceleration the payment of $26.5 million by BioD. As

previously disclosed and described in Note 4 - Acquisitions and Pro Forma Results, Integra assumed this contingent liability in connection with its acquisition of Derma Sciences. The action for a declaratory judgment was filed to clarify that Olsen's termination was for Good Reason and not Without Cause. If the employment agreement was terminated for Good Reason, then the Company believes that the earn out provision under the BioD Merger Agreement should not be accelerated and the likelihood of loss is remote.

The Company accrues for loss contingencies when it is deemed probable that a loss has been incurred and that loss is estimable. The amounts accrued are based on the full amount of the estimated loss before considering insurance proceeds, and do not include

an estimate for legal fees expected to be incurred in connection with the loss contingency. The Company consistently accrues legal fees expected to be incurred in connection with loss contingencies as those fees are incurred by outside counsel as a period cost.

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, Holders and Dividends

Our common stock trades on The NASDAQ Global Market under the symbol "IART." The following table lists the high and low closing sales prices for our common stock for each quarter for the last two years:

	2018		2017	
	High	Low	High	Low
Fourth Quarter	$64.51	$42.62	$51.77	$46.22
Third Quarter	$65.87	$57.63	$55.76	$47.80
Second Quarter	$67.23	$54.05	$54.54	$40.86
First Quarter	$57.38	$46.55	$44.90	$41.09

We have not paid any cash dividends on our common stock since our formation. Our credit facility limits the amount of dividends that we may pay. See "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations — Liquidity and Capital Resources — Amended and Restated Senior Credit Agreement." Any future determinations to pay cash dividends on the common stock will be at the discretion of our Board of Directors and will depend upon our results of operations, cash flows, and financial condition and other factors deemed relevant by the Board of Directors.

The number of stockholders of record as of February 22, 2019 was approximately 971, which includes stockholders whose shares were held in nominee name.

Sales of Unregistered Securities

There were no sales of unregistered securities during the years ended December 31, 2018, 2017 or 2016.

Sale of Registered Securities

In May 2018, the Company commenced and closed on a public offering of common stock. The Company issued 6.0 million shares of common stock and received total proceeds, net of underwriting fees and offering expenses, of approximately $349.6 million. The net proceeds from the offering were used to reduce outstanding borrowings under the revolving credit portion of the Company's Senior Credit Facility.

Issuer Purchases of Equity Securities

On December 11, 2018, the Board of Directors authorized the Company to repurchase up to $225.0 million of the Company's common stock. The program allows the Company to repurchase its shares opportunistically from time to time. The repurchase authorization expires in December 2020. Purchases may be affected through one or more open market transactions, privately negotiated transactions, transactions structured through investment banking institutions, or a combination of the foregoing. This stock repurchase authorization replaces the previous $150.0 million stock repurchase authorization, approved by the Board in 2016.

There have been no shares of common stock repurchased by the Company for the years ended December 31, 2018, 2017 or 2016.

See Note 8, Treasury Stock, in our consolidated financial statements for further details.

ITEM 6. SELECTED FINANCIAL DATA

The information set forth below should be read in conjunction with “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations” and our consolidated financial statements and related notes included elsewhere in this report. All results and data in the tables below reflect continuing operations, unless otherwise noted. As a result, the data presented below will not necessarily agree to previously issued financial statements. See Note 4, Acquisitions and Pro Forma Results for additional information regarding the impact of 2018, 2017 and 2016 acquisitions in Item 15 of this Form 10-K.

	Years Ended December 31,				
	2018	2017	2016	2015	2014
	(In thousands, except per share data)				
Operating Results:					
Total revenues, net	$1,472,441	$1,188,236	$992,075	$882,734	$796,717
Costs and expenses	1,361,443	1,143,432	876,735	803,147	728,860
Operating income (4)	110,998	44,804	115,340	79,587	67,857
Interest expense, net (1) (2)	(61,883)	(34,764)	(25,779)	(23,504)	(21,799)
Other income (expense), net (7)	8,288	1,345	845	4,588	(492)
Income from continuing operations before income taxes	57,403	11,385	90,406	60,671	45,566
(Benefit from) provision for income taxes (4) (6)	(3,398)	(53,358)	15,842	53,820	9,271
Net income from continuing operations	$60,801	$64,743	$74,564	$6,851	$36,295
Loss from discontinued operations (net of tax benefit)	$—	$—	$—	$(10,370)	$(2,291)
Net income (loss)	$60,801	$64,743	$74,564	$(3,519)	$34,004
Diluted net income per common share from continuing operations	$0.72	$0.82	$0.94	$0.10	$0.55
Diluted net loss per common share from discontinued operations	$—	$—	$—	$(0.15)	$(0.03)
Diluted net income (loss) per common share	$0.72	$0.82	$0.94	$(0.05)	$0.52
Weighted average common shares outstanding for diluted net income per share	83,999	79,121	79,194	71,354	65,920

	As of December 31,				
	2018	2017	2016	2015	2014
	(In thousands)				
Financial Position:					
Cash, cash equivalents	$138,838	$174,935	$102,055	$48,132	$71,734
Total assets (5) (8)	3,107,887	3,211,257	1,807,954	1,774,224	1,412,402
Short-term borrowings under the term loan of the Senior Credit Facility	22,500	60,000	—	14,375	3,750
Long-term borrowings including the revolving portion of the Senior Credit Facility (1)	1,210,513	1,781,142	665,000	481,875	413,125
Long-term debt (2) (5) (9)	121,200	—	—	218,240	211,623
Retained earnings (4)	348,373	285,186	220,443	145,879	314,960
Stockholders’ equity (3)	1,375,796	962,306	839,667	751,443	704,322

(1) For the years ended December 31, 2018, 2017, 2016, 2015 and 2014, we reported the borrowings outstanding under the revolving portion of our Senior Credit Facility as long-term debt as well as the 1.625% convertible senior notes due in 2016 ("2016 Convertible Notes"). We also reported the term loan as long-term debt with the exception of current principal payments due within 12 months, which are classified as short-term. At December 31, 2018, we

have a total of $1.2 billion outstanding under our Senior Credit Facility and $954.4 million available for future borrowings.

(2) In 2011, we issued $230.0 million of the 2016 Convertible Notes. The 2016 Convertible Notes were repaid in December 2016 in accordance with their terms.

In 2018, we closed on a public offering of common stock. We issued 6.0 million shares of common stock and received total proceeds, net of underwriting fees and offering expenses, of approximately $349.6 million.

(3) In 2015, we closed on a public offering of common stock. We issued 8.0 million shares of common stock and received total proceeds, net of underwriting fees and offering expenses, of approximately $219.7 million.

On January 1, 2018, we adopted Topic 606 using the modified retrospective method. Results of operations for the reporting periods after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with Topic 605, Revenue Recognition. The adoption of Topic 606 resulted in an increase to the opening retained earnings of $1.9 million, which was recorded net of taxes as of January 1, 2018 to reflect the change in timing of the recognition of revenue related to the Company's private label business from point in time to over time during the manufacturing process and goods in transit for which control was transferred to customers at the time of shipment. Total assets and liabilities increased by $7.1 million and $5.2 million, respectively, as of January 1, 2018.

(4) In 2016, the Company elected to adopt Accounting Standard Update 2016-09, Improvements to Employee Share-Based Payment Accounting (Topic 718). The Company elected to account for forfeitures as they occur. The impact in retained earnings as of December 31, 2015 from this provision was not significant. Amendments related to accounting for excess tax benefits have been adopted prospectively, resulting in recognition of excess tax benefits against income tax expenses rather than additional paid-in capital of $3.8 million for the year ended December 31, 2016.

(5) In 2016, the Company adopted Accounting Standard Update 2015-03, Simplifying the Presentation of Debt Issuance Costs. The Company adopted this guidance effective January 1, 2016 on a retrospective basis. The Company reclassified a portion of the debt issuance costs from other assets to long-term debt as of December 31, 2015, 2014 and 2013.

(6) The benefit from income taxes in 2017 includes $43.4 million related to the re-measurement of our deferred taxes resulting from a reduction of the federal statutory rate from 35% to 21% from the Tax Cuts and Jobs Act (the "2017 Tax Act"), enacted in December 2017 (see Note 12, Income Taxes, of the consolidated financial statements).

(7) In 2017, other income (expense), net, includes gain on sale of business of $2.6 million related to the Divestiture to Natus (as defined in Item 7. Management's Discussion and Analysis).

(8) Presented for continuing operations only.

(9) During the fourth quarter of 2018, the Company entered into an accounts receivable securitization facility (the "Securitization Facility"). As of December 31, 2018, the Company had $121.2 million of outstanding borrowings under its Securitization Facility. Refer to Note 5, Debt, for further information on the Securitization Facility.

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

The following discussion and analysis of our financial condition and results of operations should be read together with the selected consolidated financial data and our financial statements and the related notes appearing elsewhere in this report. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results may differ materially from those anticipated in these forward-looking statements as a result of many factors, including but not limited to those under the heading “Risk Factors.”

GENERAL

Integra, headquartered in Plainsboro, New Jersey, is a world leader in medical technology. The Company was founded in 1989 with the acquisition of an engineered collagen technology platform used to repair and regenerate tissue. Since then, Integra has developed numerous product lines from this technology for applications ranging from burn and deep tissue wounds, to the repair of dura mater in the brain, and the repair of nerves and tendons. The Company has expanded its base regenerative technology business to include surgical instruments, neurosurgical products, advanced wound care, and orthopedic hardware through a combination of several global acquisitions and by developing products internally to further meet the needs of its customers.

We manufacture and sell our products in two reportable business segments: Codman Specialty Surgical and Orthopedics and Tissue Technologies. Our Codman Specialty Surgical products offer specialty surgical implants and instrumentation for a broad range of specialties. This product category includes products and solutions for dural access and repair, precision tools and instruments, advanced energy, cerebral spinal fluid ("CSF") management and neuro monitoring including market-leading product portfolios used in neurosurgery operation suites and critical care units. Our Orthopedics and Tissue Technologies products portfolios consists of differentiated regenerative technology products for soft tissue repair and tissue regeneration products, and small bone fixation and joint replacement hardware products for both upper extremities and lower extremities. This business also includes private-label sales of a broad set of our regenerative and wound care medicine technologies.

We manufacture many of our products in plants located in the United States (the "U.S."), Canada, France, Germany, Ireland, Switzerland, and Puerto Rico. We also source most of our handheld surgical instruments, specialty metal and pyrocarbon implants, and dural sealant products through specialized third-party vendors.

Codman Specialty Surgical products are sold through a combination of directly employed sales representatives, distributors and wholesalers, depending on the customer call point. In 2018, we fully integrated the commercial teams from the acquired Codman Neurosurgery business.

Orthopedics and Tissue Technologies products are sold through directly employed sales representatives, distributors focused on their respective surgical specialties and strategic partners. During 2018, we completed the expansion of our sales channels by establishing dedicated teams for the extremity orthopedics, acute wound reconstruction, outpatient wound care and surgical reconstruction markets.

Integra is committed to delivering high quality products that positively impact the lives of millions of patients and their families. We focus on four key pillars: 1) building an execution-focused culture, 2) achieving relevant scale, 3) improving agility and innovation, and 4) leading in customer excellence. We believe that by sharpening our focus on these areas through improved planning and communication, optimization of our infrastructure, and strategically aligned tuck-in acquisitions, we can build scale, increase competitiveness and achieve our long-term goals.

We aim to achieve growth in our revenues while maintaining strong financial results. While we pay attention to any meaningful trend in our financial results, we pay particular attention to measurements that are indicative of long-term profitable growth. These measurements include (1) revenue growth (including organic growth and acquisitions), (2) gross margins on total revenues, (3) earnings before interest, taxes, depreciation, and amortization, (4) earnings per diluted share of common stock, and (5) operating cash flows.

To this end, our executive leadership team has established the following key priorities aligned to this strategy:

Strategic Acquisitions. An important part of our strategy is pursuing strategic transactions and licensing agreements that increase relevant scale in the clinical areas in which we compete. In 2018, integrating the Codman Neurosurgery business, which was acquired from Johnson and Johnson in the previous year, remained a top priority and we will continue to transition the business throughout 2019. This acquisition expanded our portfolio of neurosurgery products and established us as the world leader in neurosurgery. It has also enabled us to bring our entire Integra portfolio to a global market.

Portfolio Optimization and New Product Introductions. We are investing in innovative product development to drive a multi-generational pipeline for our key product franchises. Our product development efforts focus on regenerative technologies and other projects with the potential for significant returns on investment. In 2018, we achieved significant milestones in research and development by successfully launching nine new products. In addition to new product development, we are funding studies to gather clinical evidence to support launches, ensure market access and improve reimbursement for existing products. We also continue to identify low-growth, low-margin products and product franchises for discontinuation and will continue to look at other ways of optimizing our portfolio.

Commercial Channel Investments. With acquisitions, new product introductions and a broader portfolio of products, investing in our sales channels is a core part of our strategy to create specialization and greater focus on reaching our customers and addressing their needs. Internationally, we have increased our commercial resources significantly in all markets and are making investments to support our sales organization and maximize our commercial opportunities. We now have a strong international sales channel that will deliver our current portfolio as well as position us for expansion. In addition, we continue to build upon our leadership brands across our product franchises to enable us to engage hospital systems through enterprise-wide contracts.

Customer Excellence. We aspire to be ranked as a best-in-class provider and are committed to strengthen our relationships with all customers. We strive to consistently deliver outstanding customer service and continue to invest in technologies, systems and processes to improve the way our customers do business with us. Additionally, we expect to build on the success of our professional education programs to drive continued customer appreciation of our growing portfolio of medical technologies globally.

Equity Offering

In May 2018, the Company commenced and closed on a public offering of common stock. The Company issued 6.0 million shares of common stock and received total proceeds, net of underwriting fees and offering expenses of approximately $349.6 million. The net proceeds from the offering were used to reduce outstanding borrowings under the revolving credit portion of the Company's Senior Credit Facility.

Clinical and Product Development Activities

We continue to invest in collecting clinical evidence to support our existing products and new product launches, and to ensure that we obtain market access for broader and more cost-effective solutions. In 2017, we introduced seven new regenerative technology products, including new sizes of PriMatrix® and OmniGraft®, and our largest electromechanical product, the CUSA® Clarity. In 2018, we launched the CUSA® Clarity platform in Japan, AmnioExcel® Plus, Integra® XT ankle revision system and Panta® II in the U.S. We continue to work on advanced shoulder products and are developing a pyrocarbon hemi shoulder product to add to our orthopedic reconstruction portfolio. We launched Panta® II outside the U.S. during the first quarter of 2019. Panta® II is a new fusion nail used in ankle fixation. In our electromechanical technologies portfolio, we are focused on the development of core clinical applications and anticipate a steady flow of product launches in early 2019, including the introduction of a new electrosurgery generator, a next generation ICP monitor platform and an innovative customer-centric toolkit for our Certas™ valve along with additional shunt configurations. We continue to work with several instrument partners to bring new surgical instrument patterns to the market, enabling us to add new instruments with minimal expense and invest in ongoing development, such as in LED technology.

FDA Untitled Letter

On June 22, 2015, the FDA issued an Untitled Letter (the "Untitled Letter") alleging that BioD LLC's ("BioD") morselized amniotic membrane tissue based products do not meet the criteria for regulation as HCT/Ps solely under Section 361 of the Public Health Services Act ("Section 361") and that, as a result, BioD would need a biologics license to lawfully market those morselized products. Since the issuance of the Untitled Letter, BioD and more recently the Company have been in discussions with the FDA to communicate their disagreement with the FDA’s assertion that certain products are more than minimally manipulated. The FDA has not changed its position that certain of the BioD acquired products are not eligible for marketing solely under Section 361.

In November 2017, the FDA issued the final guidance document related to human tissue titled, “Regulatory Considerations for Human Cells, Tissues, and Cellular and Tissue-Based Products: Minimal Manipulation and Homologous Use” (the “HCT/P Final Guidance”). The HCT/P Final Guidance maintains the FDA’s position that products such as the Company’s morselized amniotic membrane tissue-based products do not meet the criteria for regulation solely as HCT/Ps. In addition, the FDA articulated a risk-based approach to enforcement and, while some uses for amniotic membrane tissue-based products would have as much as thirty-six months of enforcement discretion, other high risk uses could be subject to immediate enforcement action. The Company does not believe the uses for its amniotic membrane tissue-based products fall into the high-risk category. As of February 26, 2019 the Company has not received any further notice of enforcement action from the FDA regarding its morselized amniotic tissue-based products. Nonetheless, we can make no assurances that the FDA will continue to exercise its enforcement discretion with respect to the Company’s morselized amniotic membrane tissue-based products, and any potential action of the FDA could have a financial impact regarding the sales of such products. The Company has been considering and continues to consider regulatory approval pathways for its morselized amniotic membrane tissue-based products. Revenues from BioD morselized amniotic material-based products for the year ended December 31, 2018 were less than 1.0% of consolidated revenues.

ACQUISITIONS & DIVESTITURES

Acquisitions

Our growth strategy includes the acquisition of businesses, assets or products lines to increase the breadth of our offerings and reach of our product portfolios and drive relevant scale to our customers. As a result of several recent acquisitions, our financial results for the year ended December 31, 2018 may not be directly comparable to those of the corresponding prior-year periods. See Note 4 - Acquisitions and Pro Forma Results, to our consolidated financial statements for a further discussion.

Johnson & Johnson's Codman Neurosurgery Business

On May 11, 2017, the Company entered into an asset purchase agreement (the “Purchase Agreement”) with DePuy Synthes, Inc., a Delaware corporation (“DePuy Synthes”), a wholly-owned subsidiary of Johnson & Johnson, pursuant to which the Company agreed to acquire certain assets, and assume certain liabilities, of Johnson & Johnson’s Codman neurosurgery business (the “Codman Acquisition”). The assets and liabilities subject to the Codman Acquisition relate to the research, development, manufacturing, marketing, distribution and sale of certain products used in connection with neurosurgery procedures.

On October 2, 2017, based upon the terms and subject to the conditions set forth in the Purchase Agreement, the Codman Acquisition was completed. Under the terms of the Purchase Agreement, the Company paid an aggregate purchase price of $1.014 billion, subject to adjustments set forth in the Purchase Agreement relating to the book value of inventory transferred to us at the closing of the Codman Acquisition, the book value of certain inventory retained by DePuy Synthes that will be transferred to the Company in the future along with certain prepaid taxes.

Derma Sciences

On February 24, 2017, the Company executed the Agreement and Plan of Merger (the "Merger Agreement") under which the Company acquired all the outstanding shares of Derma Sciences, Inc., a Delaware corporation ("Derma Sciences") for an aggregate purchase price of approximately $210.8 million including payment of certain of Derma Sciences' closing expenses and settlement of stock-based compensation plans of $4.8 million and $4.3 million, respectively. The purchase price consisted of a cash payment to the former shareholders of Derma Sciences of approximately $201.7 million upon the closing of the transaction.

Derma Sciences is a tissue regeneration company focused on advanced wound and burn care that offers products to help manage chronic and hard-to-heal wounds, especially those resulting from diabetes and poor vascular functioning.

Divestitures

On September 8, 2017, the Company and certain of its subsidiaries entered into an asset purchase agreement (the “Divestiture Agreement”) with Natus Medical Incorporated (“Natus”), pursuant to which the Company agreed to divest its Camino Intracranial Pressure monitoring and the U.S. rights to the fixed pressure shunts businesses together with certain of the neurosurgery assets that were acquired as part of the Codman Acquisition (the “Divestiture”). The Divestiture Agreement was entered in connection with the review of the Codman Acquisition by the Federal Trade Commission and the antitrust authority of Spain. The Divestiture was conditioned upon completion of the Codman Acquisition.

On October 6, 2017, upon the terms and subject to the conditions set forth in the Divestiture Agreement (see Note 4 - Acquisitions and Pro Forma Results), the Divestiture was completed and Natus paid an aggregate purchase price of $46.4 million. Revenues related to the Divestiture included in the Company's financial results for the period ended December 31, 2017 was $27.0 million.

OPTIMIZATION AND INTEGRATION ACTIVITIES

As a result of our ongoing acquisition strategy and significant growth in recent years, we have undertaken cost-saving initiatives to consolidate manufacturing operations, distribution facilities and transfer activities, implement a common ERP system, eliminate duplicative positions, realign various sales and marketing activities, and expand and upgrade production capacity for our regenerative technology products. These efforts are expected to continue and while we expect a positive impact from ongoing restructuring, integration, and manufacturing transfer and expansion activities, such results remain uncertain.

RESULTS OF OPERATIONS

Executive Summary

Our net income from continuing operations in 2018 was $60.8 million, or $0.72 per diluted share, as compared to $64.7 million, or $0.82 per diluted share in 2017, and $74.6 million, or $0.94 per diluted share, in 2016.

Revenues from 2016 to 2018 increased $480.4 million, generating $258.0 million of additional gross margin over that time period resulting primarily from the businesses that we acquired and organic growth. Costs and expenses increased sequentially as new employees, especially in selling, general and administrative functions, joined the Company as a result of acquisitions. In addition, integration expenses in 2018 and 2017 increased from 2016 as a result of the businesses we acquired.

The benefit from income taxes in 2017 was primarily driven by a re-measurement of our deferred taxes resulting from a reduction of the federal statutory rate from 35% to 21% from the 2017 Tax Act and a decrease in income before income taxes in 2017 resulting from acquisition and integration costs related to the Derma Sciences and the Codman Neurosurgery acquisitions.

Special Charges

Income before taxes includes the following special charges:

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Acquisition and integration-related charges (1)	$93,926	$117,947	$18,898
Structural optimization charges	19,598	7,461	9,240
Impairment charges	4,941	3,290	—
Litigation matters	4,598	—	—
Global ERP implementation charges	—	2,780	15,585
Hurricane Maria charges	—	2,758	—
Discontinued product lines charges	—	1,156	—
Convertible debt non-cash interest	—	—	8,075
Total	$123,063	$135,392	$51,798

(1) The amounts have been reduced by $2.6 million in 2017, representing gain on sale of business to Natus. See Note 4, Acquisitions and Pro Forma Results, of our consolidated financial statements for more information.

The items reported above are reflected in the consolidated statements of operations as follows:

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Cost of goods sold	$34,563	$28,413	$18,869
Research and development	—	—	200
Selling, general and administrative	87,709	107,361	24,654
Interest expense	—	—	8,075
Other income	791	(382)	—
Total	$123,063	$135,392	$51,798

We typically define special charges as items for which the amounts and/or timing of such expenses may vary significantly from period to period, depending upon our acquisition, integration and restructuring activities, and for which the amounts are non-cash in nature, or for which the amounts are not expected to recur at the same magnitude. We believe that given our ongoing strategy of seeking acquisitions, our continuing focus on rationalizing our existing manufacturing and distribution infrastructure and our continuing review of various product lines in relation to our current business strategy, some of the special charges discussed above could recur with similar materiality in the future.

We believe that the separate identification of these special charges provides important supplemental information to investors regarding financial and business trends relating to our financial condition and results of operations. Investors may find this information useful in assessing comparability of our operating performance from period to period, against the business model objectives that management has established, and against other companies in our industry. We provide this information to investors so that they can analyze our operating results in the same way that management does and to use this information in their assessment of our core business and valuation of Integra.

Revenues and Gross Margin

Our revenues and gross margin on product revenues were as follows:

	Years Ended December 31,		
	2018	2017	2016
Segment Net Sales	(In thousands)		
Codman Specialty Surgical	$963,929	$720,301	$632,524
Orthopedics and Tissue Technologies	508,512	467,935	359,551
Total revenues	1,472,441	1,188,236	992,075
Cost of goods sold	571,496	435,511	349,089
Gross margin on total revenues	$900,945	$752,725	$642,986
Gross margin as a percentage of total revenues	61.2 %	63.3 %	64.8 %

Revenues

Year Ended December 31, 2018 Compared with Year Ended December 31, 2017.

For the year ended December 31, 2018, total revenues increased by $284.2 million, or 23.9%, to $1,472.4 million from $1,188.2 million during the prior year. Domestic revenues increased $151.6 million, or 17.0%, to $1,045.9 million and were 71.0% of total revenues for the year ended December 31, 2018. International revenues increased to $426.6 million, compared to $293.9 million during 2017. The increase compared to the prior year primarily resulted from the full-year sales impact of products acquired as part of the Codman Neurosurgery acquisition, which resulted in incremental revenue of $235.6 million, a $3.8 million favorable impact of foreign exchange as well as growth in both segments of $71.8 million, which includes twelve months of Derma Sciences revenue in 2018, offset by $27.0 million of revenue from divested products in 2017.

Codman Specialty Surgical revenues were $963.9 million, an increase of 33.8% from the prior-year period. The increase primarily resulted from incremental revenues from Codman Neurosurgery of $235.6 million. Growth in our legacy Neurosurgery portfolio was primarily driven by our CUSA® capital and disposables portfolio and dural repair. Revenues for Precision Tools and Instruments increased by low-single digits over the prior period due to increased volume in the business.

Orthopedics and Tissue Technologies revenues were $508.5 million, an increase of 8.7% from the prior-year period. In our Wound Reconstruction portfolio used in inpatient and outpatient procedures, sales of our Integra skin products including PriMatrix, and amniotic tissue products, increased mid-double digits. Revenues for Private Label increased by mid-single digits over the prior period due to increased volume in the business. In our Extremity Orthopedics business, sales declined low-single digits driven by a decline in our lower fixation portfolio offset by growth in our shoulder and ankle portfolios.

With our global reach, we generate revenues in multiple foreign currencies. Accordingly, we will experience currency exchange risk with respect to those foreign currency denominated revenues.

Year Ended December 31, 2017 Compared with Year Ended December 31, 2016.

For the year ended December 31, 2017, total revenues increased by $196.2 million, or 20%, to $1,188.2 million from $992.1 million during the prior year. Domestic revenues increased by $128.7 million, or 17%, to $894.3 million and were 75% of total revenues for the year ended December 31, 2017. International revenues increased to $293.9 million, compared to $226.5 million during 2016. Foreign exchange fluctuations had a positive impact of $2.4 million on revenues for the year.

Codman Specialty Surgical revenues were $720.3 million, an increase of 14% from the prior year. The increase primarily resulted from one quarter of revenues from Codman Neurosurgery of $76.9 million. Growth in our legacy Neurosurgery portfolio was also driven by our CUSA® capital and disposables. Precision Tools and Instruments increased by low-single digits over the prior period due to increased volume in the business.

Orthopedics and Tissue Technologies revenues were $467.9 million, an increase of 30% from the prior year. The increase largely resulted from the impact of the 2017 acquisition of Derma Sciences, which added $84.6 million incremental revenue in the period. We also saw increases in our Wound Reconstruction portfolio, Extremity Orthopedics business and Private Label business driven by strong demand for our skin products and continued relationships with customers.

With our global reach, we generate revenues in multiple foreign currencies. Accordingly, we experience currency exchange risk with respect to those foreign currency denominated revenues.

Gross Margin

Gross margin as a percentage of revenues was 61.2% in 2018, 63.3% in 2017, and 64.8% in 2016. The decrease in gross margin percentage of total revenue from 2017 to 2018 resulted primarily from dilution related to full-year product sales from the Codman Neurosurgery acquisition at lower margins than the Company's historical average. Additionally, there were higher net costs associated with amortization for technology-based intangible assets recorded in connection with the Codman Neurosurgery acquisition.

The decrease in gross margin percentage of total revenue from 2016 to 2017 resulted primarily from dilution related to product sales from the Codman Neurosurgery acquisition at lower margins than the Company's average. Additionally, there were higher net costs associated with fair value inventory purchase accounting adjustments from the Codman Neurosurgery and Derma Sciences acquisitions and amortization for technology-based intangible assets recorded in connection with the acquisitions.

Other Operating Expenses

The following is a summary of other operating expenses as a percent of total revenues:

	Years Ended December 31,		
	2018	2017	2016
Research and development	5.3 %	5.3 %	5.9 %
Selling, general and administrative	46.9%	52.5%	45.9%
Intangible asset amortization	1.4 %	1.7 %	1.4 %

Total operating expenses, which consist of research and development expenses, selling, general and administrative expenses, and intangible asset amortization expense, increased $82.0 million or 12% to $789.9 million in 2018, compared to $707.9 million in the prior year.

RESEARCH AND DEVELOPMENT. Research and development totaled $78.0 million in 2018, compared to $63.5 million in 2017 and $58.2 million in 2016. Similar to the prior year, the increase in research and development costs from 2017 to 2018 primarily resulted from the full-year impact of the acquisitions of Derma Sciences and Codman Neurosurgery and additional spending on new product development and clinical studies.

SELLING, GENERAL AND ADMINISTRATIVE. Selling, general and administrative expenses in the year ended December 31, 2018 increased by $66.7 million or 10.7% to $690.7 million, compared to $624.1 million in the same period in the prior year. Selling and marketing expenses increased by $72.3 million, primarily resulting from the full-year impact of the Derma Sciences and Codman Neurosurgery acquisitions, higher headcount in our sales force compared to the prior year, higher commission costs resulting from increases in revenue and channel expansion. General and administrative costs decreased by $5.6 million, primarily resulting from one-time costs for the year ended

December 31, 2017 related to acquiring and integrating the Derma Sciences and Codman Neurosurgery businesses in the year of acquisition.

Selling, general and administrative expenses for the year ended December 31, 2017 increased by $168.5 million or 37.0% to $624.1 million, compared to $455.6 million in 2016. Selling and marketing expenses increased by $63.9 million, primarily resulting from the Derma Sciences and Codman Neurosurgery acquisitions, higher headcount in our sales force compared to the prior year, and higher commission costs resulting from increases in revenue. General and administrative costs increased by $104.6 million,

primarily resulting from the costs related to acquiring and integrating the Derma Sciences and Codman Neurosurgery businesses and increased compensation costs.

INTANGIBLE ASSET AMORTIZATION.

Amortization expense (excluding amounts reported in cost of product revenues for technology-based intangible assets) in the year ended December 31, 2018 was $21.2 million, compared to $20.4 million in 2017. The increase primarily resulted from the full-year impact of amortization on the intangible assets added as part of the Derma Sciences acquisition.

In 2017, amortization expense (excluding amounts reported in cost of product revenues for technology-based intangible assets) in the year ended December 31, 2017 was $20.4 million, compared to $13.9 million in 2016. The increase primarily resulted from amortization on the intangible assets added as part of our Derma Sciences acquisition. We may discontinue certain products in the future as we continue to assess the profitability of our product lines. As our profitability assessment evolves, we may make further decisions about our trade names and incur additional impairment charges or accelerated amortization. We expect total annual amortization expense (including amounts reported in cost of product revenues, but excluding any possible future amortization associated with acquired in-process research and development ("IPR&D")) to be approximately $66.2 million in 2019, $65.9 million in 2020, $64.8 million in 2021, $61.3 million in 2022, $60.4 million in 2023 and $596.6 million thereafter.

Non-Operating Income and Expenses

The following is a summary of non-operating income and expenses:

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Interest income	$2,800	$255	$24
Interest expense	(64,683)	(35,019)	(25,803)
Other income, net	8,288	1,345	845
Total non-operating income and expense	$(53,595)	$(33,419)	$(24,934)

Interest Income and Interest Expense

Interest income increased in 2018 as compared to 2017 primarily due to the interest rate differential on cross-currency swaps designated as net investment hedges. These cross-currency swaps were consummated during the fourth quarter of 2018. Interest income was minimal in 2017 and 2016.

Interest expense was $64.7 million, $35.0 million and $25.8 million in 2018, 2017 and 2016, respectively. Interest expense increased in 2018 as compared to 2017 and 2016 primarily resulting from an increase in our weighted average interest rate and the full-year impact of increased borrowings under our Senior Credit Facility to fund the acquisitions of Derma Sciences and Codman Neurosurgery in 2017. As of December 31, 2018 and 2017, our weighted average interest rate was 3.9% and 3.6%, respectively.

Interest expense increased in 2017 as compared to 2016 primarily because of increased borrowings under our Senior Credit Facility to fund the acquisitions of Derma Sciences and Codman Neurosurgery. This increase was offset by non-cash interest in 2016 related to the accounting for convertible securities of $8.1 million.

Our reported interest expense for the years ended December 31, 2018, 2017 and 2016 included $6.3 million, $2.7 million and $2.5 million, respectively, of non-cash amortization of debt issuance costs.

Other Income, Net

Other income of $8.3 million in 2018 was primarily due to the full-year impact of the interest rate differential on cross-currency swaps designated as cash flow hedges. These cross-currency swaps were consummated during the fourth quarter of 2017. Other income increased in 2017, as compared to 2016, primarily due to the gain on sale of Natus in 2017 offset by losses on sales of short-term investments acquired from Derma Sciences and transactional foreign exchange losses.

Income Taxes

Our effective income tax rate was (5.9)%, (468.7)% and 17.5% of income before income taxes in 2018, 2017 and 2016, respectively. See Note 12, “Income Taxes,” in our consolidated financial statements for a reconciliation of the

United States federal statutory rate to our effective tax rate.

In 2018, the Company's higher worldwide effective tax rate, as compared to 2017, was primarily attributable to an increase in the Company's income before taxes and the continuing impact of complying with the 2017 Tax Act. The Company recorded a $2.0

million expense related to GILTI and a $0.9 million expense related to nondeductible executive compensation; both resulting from changes made by the 2017 Tax Act.

The 2017 Tax Act included numerous changes to existing U.S. tax laws that have and will continue to impact the Company. The most notable change was a reduction in the federal statutory tax rate from 35% to 21%. In 2017, the lower effective tax rate was primarily driven by a tax benefit of $43.4 million as a result of the re-measurement of deferred taxes using this reduced federal tax rate. In addition, the Company's income before taxes decreased in 2017 compared to 2016, primarily resulting from the acquisition and integration costs related to the 2017 acquisitions of Derma Sciences and Codman Neurosurgery.

In 2016, our lower worldwide effective tax rate, as compared to 2015, was primarily attributable to an excess tax benefit of $3.8 million as a result of early adoption of the new share-based compensation accounting guidance (ASU 2016-09), a favorable jurisdictional income mix, significantly lower non-deductible acquisition costs versus the prior year, and a benefit of $0.5 million for a Federal research credit study.

Our effective tax rate could vary from year to year depending on, among other factors, tax law changes, the geographic and business mix and taxable earnings and losses. We consider these factors and others, including our history of generating taxable earnings, in assessing our ability to realize deferred tax assets. We estimate the range of our worldwide effective income tax rate for 2019 to be approximately 18.5% to 19.0%.

We recorded a cumulative valuation allowance of $7.0 million against the remaining $104.9 million of gross deferred tax assets recorded at December 31, 2018. Our deferred tax asset valuation allowance decreased by $1.0 million in 2018 and increased by $4.4 million in 2017. This valuation allowance relates to deferred tax assets for which the Company does not believe it has satisfied the more likely than not threshold for realization. The decrease in valuation allowance in 2018 primarily results from the realization of certain deferred tax assets related to acquisition of Derma Sciences and the impact of current year activity. If we determine that we would be able to realize more or less than the recorded amount of net deferred tax assets, we will record an adjustment to the deferred tax asset valuation allowance in the period such a determination is made.

At December 31, 2018, we had net operating loss carryforwards of $118.4 million for federal income tax purposes, $34.5 million for foreign income tax purposes and $25.6 million for state income tax purposes to offset future taxable income. The federal net operating loss carryforwards expire through 2035, $0.9 million of the foreign net operating loss carryforwards expire through 2025 with the remaining $33.6 million having an indefinite carry forward period. The state net operating loss carryforwards expire through 2037.

The 2017 Tax Act imposed a one-time repatriation tax on accumulated foreign subsidiaries' untaxed foreign earnings ("Toll Tax"). As of December 31, 2017, we recorded income tax expense of approximately $5.5 million as an estimate of the Toll Tax on certain foreign earnings. The calculation of the Toll Tax allows for the ability to offset positive foreign earnings with existing foreign deficits and use of foreign tax credits. We finalized our tax filings for 2017 and recorded a benefit of $1.0 million as an adjustment to the 2017 Toll Tax liability; resulting in a total Toll Tax liability of $4.5 million. The Company asserts that it has the ability and intent to indefinitely reinvest the undistributed earnings from its foreign operations unless there is a tax-free manner under which to remit the earnings.

As of December 31, 2018, the Company has not provided deferred income taxes on unrepatriated earnings from foreign subsidiaries as they are deemed to be indefinitely reinvested. Such taxes would primarily be attributable to foreign withholding taxes and local income taxes when such earnings are distributed. As such, the Company has determined the tax impact of repatriating these earnings would not be material as of December 31, 2018.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the 2017 Tax Act. The Company recognized the provisional tax impacts related to deemed repatriated earnings and the revaluation of deferred tax assets and liabilities and included these amounts in its consolidated financial statements for the year ended December 31, 2017. The Company finalized its calculations and completed its accounting for the income tax effects of the 2017 Tax Act in December 2018. The Company adjusted its provisional estimate of the Toll Tax, reducing the total liability by $1.0 million, which decreased the Company's effective tax rate by 1.7%.

The 2017 Tax Act subjects the Company to tax on GILTI earned by certain foreign subsidiaries. The Company can make an accounting policy election to either recognize deferred taxes related to GILTI or to provide for the tax

expense related to GILTI in the year the tax is incurred as a period expense. The Company has elected to account for the GILTI tax in the year the tax is incurred.

GEOGRAPHIC PRODUCT REVENUES AND OPERATIONS

We attribute revenues to geographic areas based on the location of the customer. Total revenue by major geographic area consisted of the following:

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
United States	$1,045,887	$894,260	$765,608
Europe	201,354	150,147	120,588
Asia Pacific	144,253	80,636	59,985
Rest of World	80,947	63,193	45,894
Total Revenues	$1,472,441	$1,188,236	$992,075

In 2018, sales to our U.S. customers increased 17.0% from the prior year. We saw increases in our Wound Reconstruction portfolio, Private Label business, Precision Tools and Instruments business and our CUSA® capital and disposables portfolio which benefited from organic growth as well as the full-year impact of the Derma Sciences and Codman Neurosurgery acquisitions consummated in 2017. European sales increased 34.1% in 2018 compared to the prior year, resulting primarily from the full-year impact of the Derma Sciences and Codman Neurosurgery acquisitions as well as increases in our Wound Reconstruction portfolio. Sales to customers in Asia Pacific and Rest of World increased 78.9% and 28.1% in 2018, respectively, compared to the prior year, primarily driven by the full-year impact of the Derma Sciences and Codman Neurosurgery acquisitions.

In 2017, sales to our U.S. customers increased 16.8% from the prior year. We saw increases in our regenerative technologies, private label, dural access and repair, advanced energy, precision tools and instruments and extremities businesses, which benefited from organic growth as well as contributions from the Derma Sciences and Codman Neurosurgery acquisitions. European sales increased 24.5% in 2017 compared to the prior year, resulting primarily from increases in sales in our Codman Specialty Surgical portfolio as well as regenerative technologies. Both areas included contributions from the Codman Neurosurgery and Derma Sciences acquisitions. Sales to customers in Asia Pacific and Rest of World increased by 34.4% and 37.7% in 2017, respectively, compared to the prior year, primarily driven by the Derma Sciences and Codman Neurosurgery acquisitions.

With our global reach, we generate revenues and incur operating expenses in multiple foreign currencies. Accordingly, we will experience currencies exchange risk with respect to those foreign currency denominated revenues and operating expenses. The Company generated revenues denominated in foreign currencies of $332.8 million, $185.9 million and $163.3 million during the years ended December 31, 2018, 2017 and 2016, respectively. We will continue to assess the potential effects that changes in foreign currency exchange rates could have on our business. However, either a strengthening or a weakening of the dollar against individual foreign currencies could reduce future revenues and gross margins. If we believe this potential impact presents a significant risk to our business, we may enter into derivative financial instruments to mitigate this risk.

Additionally, we generate significant revenues outside the U.S., a portion of which are U.S. dollar-denominated transactions conducted with customers who generate revenue in currencies other than the U.S. dollar. As a result, currency fluctuations between the U.S. dollar and the currencies in which those customers do business may have an impact on the demand for our products in foreign countries.

Local economic conditions, regulatory, legal or political considerations, the effectiveness of our sales representatives and distributors, local competition and changes in local medical practice all could combine to affect our sales into markets outside the U.S.

Relationships with customers and effective terms of sale frequently vary by country, often with longer-term receivables than are typical in the U.S.

LIQUIDITY AND CAPITAL RESOURCES

Cash and Marketable Securities

We had cash and cash equivalents totaling $138.8 million and $174.9 million at December 31, 2018 and 2017, respectively.

In 2019, we anticipate that our principal uses of cash will be for support and maintenance of our existing plants for facility automation and developments of our new Mansfield, Massachusetts manufacturing facility.

We determined that our existing cash, future cash to be generated from operations, and our remaining $954.4 million of borrowing capacity under our senior secured revolving credit facility at December 31, 2018, if needed, will satisfy our

foreseeable working capital, debt repayment and capital expenditure requirements for at least the next twelve months after the date the financial statements are issued or are available to be issued.

At December 31, 2018, our non-U.S. subsidiaries held approximately $110.5 million of cash and cash equivalents that are available for use by all of our operations around the world. The Company asserts that it has the ability and intent to indefinitely reinvest the undistributed earnings from its foreign operations unless there is a tax-free manner under which to remit the earnings.

Cash Flows

	Year Ended December 31,	
	2018	2017
	(In thousands)	
Net cash provided by operating activities	$199,683	$114,544
Net cash used in investing activities	(49,705)	(1,221,335)
Net cash provided (used in) by financing activities	(180,872)	1,168,947
Effect of exchange rate fluctuations on cash	(5,203)	10,724
Net increase (decrease) in cash and cash equivalents	$(36,097)	$72,880

Cash Flows Provided by Operating Activities

We generated operating cash flows of $199.7 million, $114.5 million and $116.4 million for years ended December 31, 2018, 2017 and 2016, respectively.

Operating cash flows in 2018 increased compared to the same period in 2017. Net income for the year, adjusted for items included in net income which did not result in a change to our cash balance, amounted to cash inflows of $197.9 million, compared to $115.9 million in 2017. The increase to net income, adjusted for items included in net income year over year is primarily attributed to the full-year operating impact of the Derma and Codman acquisitions consummated during 2017 and organic growth of the Company during 2018. Changes in working capital in 2018 increased cash flows by approximately $0.3 million. Among the changes in working capital, accounts receivable used $17.0 million of cash, inventory provided $8.3 million of cash, prepaid expenses and other current assets provided $3.9 million of cash, accounts payable, accrued expenses and other current liabilities provided $3.6 million of cash and deferred revenue provided $1.5 million of cash.

Operating cash flows in 2017 decreased compared to the same period in 2016. Net income in 2017 decreased compared to 2016 due to an increase in expenses related to the acquisitions and integrations of Codman Neurosurgery and Derma Sciences. Net income for the year, adjusted for items included in net income which did not result in a change to our cash balance, amounted to cash inflows of $115.9 million, compared to $170.4 million in 2016. Changes in working capital in 2017 decreased cash flows by approximately $24.2 million. Among the changes in working capital, accounts receivable used $89.7 million of cash, inventory provided $0.1 million of cash, prepaid expenses and other current assets used $33.8 million of cash, and accounts payable, accrued expenses and other current liabilities provided $95.3 million of cash.

Operating cash flows in 2016 decreased compared to the same period in 2015. Net income in 2016 increased compared to 2015 due to an increase in income from continuing operations before income taxes and because of the impact of the tax valuation allowance recorded in 2015 in conjunction with the SeaSpine spin-off, which was a non-cash adjustment. In 2016, we also made payments of accreted interest of $42.8 million compared to $0.4 million paid in 2015, which are included in operating activities. Net income for the year, adjusted for items included in net income which did not result in a change to our cash balance, amounted to cash inflows of $170.4 million, compared to $127.8 million in 2015. Changes in working capital in 2016 decreased cash flows by approximately $11.3 million. Among the changes in working capital, accounts receivable used $17.5 million of cash, inventory used $9.6 million of cash, prepaid expenses and other current assets provided $14.9 million of cash, and accounts payable, accrued expenses and other current liabilities used $0.4 million of cash.

Cash Flows Used in Investing Activities

During the year ended December 31, 2018, we paid $77.7 million for capital expenditures, most of which were directed to the expansion of our new Mansfield, Massachusetts facility and commercial expansion. We received $26.7 million from the Codman Neurosurgery acquisition for a working capital adjustment.

During the year ended December 31, 2017, we paid an aggregate of $1.2 billion for the acquisitions of Codman Neurosurgery and Derma Sciences. The payment for Derma Sciences included a $210.5 million payment of the purchase price plus a $26.6 million payment for the BioD Product Payment in May 2017 (see Note 4, Acquisitions and Pro Forma Results). We received $17.0 million from the sale of short-term investments acquired from Derma Sciences. We also received $46.4 million from the Divestiture to Natus in October 2017. We paid $43.5 million in cash for capital expenditures, most of which was directed towards the expansion of our manufacturing facilities and commercial expansion.

During the year ended December 31, 2016, we paid $47.3 million in cash for capital expenditures, most of which was directed to the expansion of our collagen manufacturing center, new instruments for several product launches, facility improvements and enterprise resource planning implementation.

Cash Flows Provided by Financing Activities

Our principal sources of cash from financing activities in the year ended December 31, 2018 were $349.6 million from the issuance of common stock and $171.2 million in borrowings under our Senior Credit Facility and Securitization Facility. These were offset by repayments of $660.0 million on the revolving portion of our Senior Credit Facility, payments of $15.9 million for inventory that was included in the initial purchase accounting for Codman Neurosurgery and $22.3 million of payments relating to contingent consideration.

Our principal sources of cash from financing activities in the year ended December 31, 2017 were $700.0 million under the Term Loan component of our Senior Credit Facility, and $607.0 million of borrowings under the revolver component of our Senior Credit Facility offset by $117.0 million in repayments under our Senior Credit Facility, and $19.0 million in debt issuance costs related to our Senior Credit Facility.

Our principal sources of cash from financing activities in the year ended December 31, 2016 were $500.0 million under the term loan component of our Senior Credit Facility, $180.0 million of borrowings under the revolver component of our Senior Credit Facility, and a $184.3 million repayment of the 2016 Convertible Notes offset by $511.3 million in repayments under our Senior Credit Facility.

Working Capital

At December 31, 2018 and December 31, 2017, working capital was $512.5 million and $473.2 million, respectively. Working capital consists of total current assets less total current liabilities as presented in the consolidated balance sheets.

Upcoming Debt Maturities

The first quarterly installment of the Company's Term Loan component of its Senior Credit Facility is due on September 30, 2019. We recorded a total of $22.5 million of the Term Loan component of the Senior Credit Facility as a current liability in the Company's consolidated balance sheets.

Amended and Restated Senior Credit Agreement

On May 3, 2018, the Company entered into the fifth amendment and restatement (the "May 2018 Amendment") of its Senior Credit Facility (the "Senior Credit Facility") with a syndicate of lending banks with Bank of America, N.A., as Administrative Agent. The May 2018 Amendment extended the maturity date to May 3, 2023 and decreased the applicable rate, as described below. The Company continues to have the aggregate principal amount of $2.2 billion available to it through the following facilities:

i. a $900.0 million Term Loan facility; and

ii. a $1.3 billion revolving credit facility, which includes a $60.0 million sublimit for the issuance of standby letters of credit and a $60.0 million sublimit for swingline loans.

In connection with the May 2018 Amendment, the Company’s maximum consolidated total leverage ratio in the financial covenants (as defined in the Senior Credit Facility) was modified to the following:

Fiscal Quarter	Maximum Consolidated Total Leverage Ratio
Execution of May 2018 Amendment through March 31, 2019	5.50 : 1.00
June 30, 2019 through March 31, 2020	5.00 : 1.00
June 30, 2020 through March 31, 2021	4.50 : 1.00
June 30, 2021 and thereafter	4.00 : 1.00

Borrowings under the Senior Credit Facility bear interest, at the Company's option, at a rate equal to the following:

i. the Eurodollar Rate (as defined in the amendment and restatement) in effect from time to time plus the applicable rate (ranging from 1.00% to 1.75%), or

ii. the highest of:

1. the weighted average overnight Federal funds rate, as published by the Federal Reserve Bank of New York, plus 0.50%, or plus the applicable rate (ranging from 0% to 0.75%),
2. the prime lending rate of Bank of America, N.A. plus the applicable rate (ranging from 0% to 0.75%), and
3. the one-month Eurodollar Rate plus 1.00% plus the applicable rate (ranging from 0% to 0.75%).

The applicable rates are based on the Company’s consolidated total leverage ratio (defined as the ratio of (a) consolidated funded indebtedness less cash that is not subject to any restriction on the use or investment thereof to (b) consolidated EBITDA at the time of the applicable borrowing).

The Company will also pay an annual commitment fee (ranging from 0.15% to 0.35%), based on the Company’s consolidated total leverage ratio, on the amount available for borrowing under the revolving credit facility.

We plan to utilize the Senior Credit Facility for working capital, capital expenditures, acquisitions, debt repayments and other general corporate purposes. At December 31, 2018 and 2017, there was $345.0 million and $655.0 million outstanding, respectively, under the revolving portion of the Senior Credit Facility at a weighted average interest rate of 4.0% and 3.7%, respectively. At December 31, 2018 and 2017, there was $900.0 million and $1.2 billion outstanding under the Term Loan component of the Senior Credit Facility at a weighted average interest rate of 3.9% and 3.6%, respectively.

The Senior Credit Facility is collateralized by substantially all of the assets of the Company’s U.S. subsidiaries, excluding intangible assets. The Senior Credit Facility is subject to various financial and negative covenants and at December 31, 2018 the Company was in compliance with all such covenants. The Company capitalized $4.2 million and $19.1 million of incremental financing costs in 2018 and 2017, respectively, in connection with the modifications of the Senior Credit Facility.

Letters of credit outstanding as of December 31, 2018 and 2017 totaled $0.6 million, respectively. There were no amounts drawn as of December 31, 2018.

Securitization Facility

During the fourth quarter of 2018, the Company entered into an accounts receivable Securitization Facility under which accounts receivable of certain domestic subsidiaries are sold on a non-recourse basis to a special purpose entity (“SPE”), which is a bankruptcy-remote, consolidated subsidiary of the Company. Accordingly, the assets of the SPE are not available to satisfy the obligations of the Company or any of its subsidiaries. From time to time, the SPE may finance such accounts receivable with a revolving loan facility secured by a pledge of such accounts receivable. The amount of outstanding borrowings on the revolving loan facility at any one time is limited to $150.0 million. The Securitization Facility agreement is for an initial three-year term and may be extended. The agreement governing the Securitization Facility contains certain covenants and termination events. An occurrence of an event of default or a termination event under this facility may give rise to the right of its counterparty to terminate this facility. As of December 31, 2018, the Company was in compliance with the covenants and none of the termination events had occurred. As of December 31, 2018, the Company had $121.2 million of outstanding borrowings under its Securitization Facility at a weighted average interest rate of 3.4%.

The fair value of outstanding borrowings of the Senior Credit Facility's revolving credit facility and Term Loan component at December 31, 2018 were approximately $322.2 million and $852.1 million, respectively. The fair value of the outstanding borrowing of the Securitization Facility at December 31, 2018 was approximately $116.4 million. These fair values were determined by using a discounted cash flow model based on current market interest rates available to the Company. These inputs are corroborated by observable market data for similar liabilities and therefore

classified within Level 2 of the fair value hierarchy. Level 2 inputs represent inputs that are observable for the asset or liability, either directly or indirectly and are other than active market observable inputs that reflect unadjusted quoted prices for identical assets or liabilities.

Convertible Debt and Related Hedging Activities

On December 15, 2016, the Company extinguished its 2016 Convertible Notes by paying the remaining principal amount of $227.1 million and issued 2.9 million shares of common stock with a fair value of $122.0 million related to excess conversion value. No gain or loss on extinguishment was recognized as a result of the conversion. The Company also received 2.9 million shares of common stock from the exercise of call options with hedge participants (as defined below) with a fair value of $123.1 million at the date of the exercise. The shares of common stock received from the exercise of the call options were held as treasury stock as of December 31, 2016 at a weighted average price of $41.78 per share for a total of $123.1 million.

The 2016 Convertible Notes were issued on June 15, 2011 with the aggregate principal of $230.0 million and maturity date of December 15, 2016. The 2016 Convertible Notes bore interest at a rate of 1.625% per annum payable semi-annually in arrears on December 15 and June 15 of each year. The 2016 Convertible Notes were senior, unsecured obligations and were convertible into cash and, if applicable, shares of its common stock based on a conversion rate defined within the note agreement.

In connection with the issuance of the 2016 Convertible Notes, we entered into call transactions and warrant transactions, primarily with affiliates of the initial purchasers of such notes (the “hedge participants”). The initial strike price of the call transaction was approximately $28.72 per share, subject to customary anti-dilution adjustments. The initial strike price of the warrant transaction was approximately $35.03 per share, subject to customary anti-dilution adjustments. The strike price of the call transactions and warrant transactions has been adjusted similar to the 2016 Convertible Notes as a result of the spin-off of the Company's spine business in July 2015 to $26.42 per share and $32.22 per share, respectively. The warrants expired on a series of expiration dates from March 2017 to August 2017. For the year ended December 31, 2017, the hedge participants exercised 8,707,202 warrants, and, as a result, the Company issued 2,839,743 shares of common stock for the year ended December 31, 2017. The Company has no warrants outstanding as of December 31, 2018.

Share Repurchase Plan

On December 11, 2018, the Board of Directors authorized the Company to repurchase up to $225 million of the Company’s common stock. The program allows the Company to repurchase its shares opportunistically from time to time. The repurchase authorization expires in December 2020. Purchases may be affected through one or more open market transactions, privately negotiated transactions, transactions structured through investment banking institutions, or a combination of the foregoing. This stock repurchase authorization replaces the previous $150 million stock repurchase authorization which was approved by the Board in 2016.

There have been no shares of common stock repurchased by the Company under any of these authorizations in the years ended December 31, 2018 or 2017.

Dividend Policy

We have not paid any cash dividends on our common stock since our formation. Our Senior Credit Facility limits the amount of dividends that we may pay. Any future determinations to pay cash dividends on our common stock will be at the discretion of our Board of Directors and will depend upon our financial condition, results of operations, cash flows and other factors deemed relevant by the Board of Directors.

Contractual Obligations and Commitments

As of December 31, 2018, we were obligated to pay the following amounts under the following agreements:

		Payments Due by Calendar Year			
	Total	2019	2020-2021	2022-2023	Thereafter
	(In millions)				
Senior Credit Facility - Revolver (1)	$345.0	$—	$ —	$ 345.0	$ —
Senior Credit Facility - Term Loan	900.0	22.5	101.2	776.3	—
Securitization Facility (1)	121.2	—	121.2	—	—
Interest (2)	136.8	34.7	64.3	37.8	—
Employment Agreements (3)	4.0	3.0	1.0	—	—
Operating Leases (4)	169.8	16.8	26.3	24.2	102.5
Purchase Obligations	13.4	11.6	1.8	—	—
Others	12.0	6.1	1.3	1.3	3.3

Total	$1,702.2	$94.7	$ 317.1	$ 1,184.6	$ 105.8

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(1) The Company may borrow and make payments against the Revolving Credit Facility and Securitization Facility from time to time and considers all of the outstanding amounts to be long-term based on its current intent and ability to repay the borrowing outside the next twelve-month period.

(2) As the Revolving Credit Facility and Securitization Facility can be repaid at any time, no interest has been included in the calculation.

(3) Amounts shown under Employment Agreements do not include compensation resulting from a change in control.

(4) During 2018, the Company entered into a lease for a new corporate headquarters in Princeton, NJ which will commence during the second quarter of 2019. The Company will make cumulative total payments of approximately $67.0 million over the term of the lease.

Excluded from the contractual obligations table is the liability for uncertain tax benefits, including interest and penalties, totaling $0.7 million. The Company has excluded its contingent consideration obligation and above market supply agreement liability related to prior acquisitions from the contractual obligations table above; these liabilities had a total fair value of $0.4 million at December 31, 2018. The liabilities for uncertain tax benefits, contingent consideration, and the above market supply agreement liability have been excluded because we cannot make a reliable estimate of the period in which the uncertain tax benefits or contingent consideration may be realized.

Off-Balance Sheet Arrangements

There were no off-balance sheet arrangements during the year ended December 31, 2018 that have or are reasonably likely to have, a current or future effect on our financial condition, changes in financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to our interests.

CRITICAL ACCOUNTING POLICIES AND THE USE OF ESTIMATES

Our discussion and analysis of financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities, and the reported amounts of revenues and expenses. Significant estimates affecting amounts reported or disclosed in the consolidated financial statements include allowances for doubtful accounts receivable and sales returns and allowances, net realizable value of inventories, valuation of intangible assets including in-process research and development, amortization periods for acquired intangible assets, estimates of projected cash flows and discount rates used to value intangible assets and test goodwill and intangible assets for impairment, estimates of projected cash flows and depreciation and amortization periods for long-lived assets, computation of taxes, computation of valuation allowances recorded against deferred tax assets, valuation of stock-based compensation, valuation of pension assets and liabilities, valuation of derivative instruments, valuation of the equity component of convertible debt instruments, valuation of debt instruments and loss contingencies. These estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the current circumstances. Actual results could differ from these estimates.

We believe that the following accounting policies, which form the basis for developing these estimates, are those that are most critical to the presentation of our consolidated financial statements and require the more difficult subjective and complex judgments:

Allowances for Doubtful Accounts Receivable and Sales Returns and Allowances

We evaluate the collectability of accounts receivable based on a combination of factors. In circumstances where a specific customer is unable to meet its financial obligations to us, we record an allowance against amounts due to reduce the net recognized receivable to the amount that we reasonably expect to collect. For all other customers, we record allowances for doubtful accounts based on the length of time the receivables are past due, the current business environment and our historical experience. If the financial condition of customers or the length of time that receivables are past due were to change, we may change the recorded amount of allowances for doubtful accounts in the future through charges or reductions to selling, general and administrative expense.

We record a provision for estimated sales returns and allowances on revenues in the same period as the related revenues are recorded. We base these estimates on historical sales returns and allowances and other known factors. If actual returns or allowances differ from our estimates and the related provisions for sales returns and allowances, we may change the provision in the future through an increase or decrease in revenues.

Inventories

Inventories, consisting of purchased materials, direct labor and manufacturing overhead, are stated at the lower of cost (determined by the first-in, first-out method) or net realizable value. At each balance sheet date, we evaluate ending inventories for excess quantities, obsolescence or shelf-life expiration. Our evaluation includes an analysis of historical sales levels by product, projections of future demand by product, the risk of technological or competitive obsolescence for our products, general market conditions, a review of the shelf-life expiration dates for our products, and the feasibility of reworking or using excess or obsolete products or components in the production or assembly of other products that are not obsolete or for which we do not have excess quantities

in inventory. To the extent that we determine there are excess or obsolete quantities or quantities with a shelf life that is too near its expiration for us to reasonably expect that we can sell those products prior to their expiration, we adjust their carrying value to estimated net realizable value. If future demand or market conditions are lower than our projections, or if we are unable to rework excess or obsolete quantities into other products, we may record further adjustments to the carrying value of inventory through a charge to cost of product revenues in the period the revision is made.

Acquisitions

Results of operations of acquired companies are included in the Company's results of operations as of the respective acquisition dates. Net assets acquired are recorded at fair value at the date of the acquisition. Any purchase price in excess of these net assets is recorded as goodwill. The fair values of net assets acquired may be subject to revision based on the final determination of fair values during the measurement period, which may be up to one year from the acquisition date.

Contingent consideration is recognized at the estimated fair value on the acquisition date. Subsequent changes to the fair value of contingent payments are recognized in earnings. Contingent payments related to acquisitions consist of development, regulatory, and commercial milestone payments, in addition to sales-based payments, and are valued using discounted cash flow techniques. The fair value of development, regulatory, and commercial milestone payments reflects management's expectations of the probability of payment and increases or decreases as the probability of payment or expectation of timing of payments changes. The fair value of sales-based payments is based upon probability-weighted future revenue estimates and increases or decreases as revenue estimates or expectation of timing of payments changes.

Valuation of Goodwill

The excess of the cost over the fair value of net assets of acquired businesses is recorded as goodwill. Goodwill is not subject to amortization, but is reviewed for impairment at the reporting unit level annually, or more frequently if impairment indicators arise. Our assessment of the recoverability of goodwill is based upon a comparison of the carrying value of goodwill with its estimated fair value. We review goodwill for impairment annually as of July 31 and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. Refer to Note 7 - Goodwill and Other Intangible Assets for more information on reportable segments.

Valuation of Identifiable Intangible Assets

Other intangible assets include patents, trademarks, purchased technology, and supplier and customer relationships. Identifiable intangible assets are initially recorded at fair market value at the time of acquisition generally using an income or cost approach. The Company capitalizes costs incurred to renew or extend the term of recognized intangible assets and amortizes those costs over their expected useful lives.

Derivatives

We develop, manufacture, and sell medical devices globally. Our earnings and cash flows are exposed to market risk from changes in interest rates and currency exchange rates. We address these risks through a risk management program that includes the use of derivative financial instruments and operate the program pursuant to documented corporate risk management policies. All derivative financial instruments are recognized in the financial statements at fair value in accordance with the authoritative guidance. Under the guidance, for those instruments that are designated and qualify as hedging instruments, the hedging instrument must be designated as a fair value hedge, cash flow hedge, or a hedge of a net investment in a foreign operation, based on the exposure being hedged. The accounting for changes in the fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship and, further, on the type of hedging relationship. Our derivative instruments do not subject our earnings or cash flows to material risk, and gains and losses on these derivatives generally offset losses and gains on the item being hedged. We have not entered into derivative transactions for speculative purposes and from time to time, we may enter into derivatives that are not designated as hedging instruments in order to protect the Company from currency volatility due to intercompany balances.

All derivative instruments are recognized at their fair values as either assets or liabilities on the balance sheet. We determine the fair value of our derivative instruments, using the framework prescribed by the authoritative guidance, by considering the estimated amount we would receive to sell or transfer these instruments at the reporting date and by taking into account expected forward interest rates, currency exchange rates, the creditworthiness of the counterparty

for assets, and our creditworthiness for liabilities. In certain instances, we may utilize a discounted cash flow model to measure fair value. Generally, we use inputs that include quoted prices for similar assets or liabilities in active markets, other observable inputs for the asset or liability, and inputs that are derived principally from, or corroborated by, observable market data by correlation or other means.

Income Taxes

Since we conduct operations on a global basis, our effective tax rate has and will depend upon the geographic distribution of our pre-tax earnings among locations with varying tax rates. Changes in the tax rates of the various jurisdictions in which we operate affect our profits. In addition, we maintain a reserve for uncertain tax benefits, changes to which could impact our effective tax

rate in the period such changes are made. The effective tax rate can also be impacted by changes in valuation allowances of deferred tax assets, and tax law changes.

Our provision for income taxes may change period-to-period based on specific events, such as the settlement of income tax audits and changes in tax laws, as well as general factors, including the geographic mix of income before taxes, state and local taxes and the effects of the Company's global income tax strategies. We maintain strategic management and operational activities in overseas subsidiaries. See Note 12, Income Taxes, in our consolidated financial statements for disclosures related to foreign and domestic pretax income, foreign and domestic income tax expense (benefit) and the effect foreign taxes have on our overall effective tax rate.

We recognize a tax benefit from an uncertain tax position only if it is more likely than not to be sustained upon examination based on the technical merits of the position. The amount of the accrual for which an exposure exists is measured by determining the amount that has a greater than 50 percent likelihood of being realized upon ultimate settlement of the position. Components of the reserve are classified as a long-term liability in the consolidated balance sheets. We record interest and penalties accrued in relation to uncertain tax benefits as a component of income tax expense.

We believe that we have identified all reasonably identifiable exposures and that the reserve we have established for identifiable exposures is appropriate under the circumstances; however, it is possible that additional exposures exist and that exposures will be settled at amounts different from the amounts reserved. It is also possible that changes in facts and circumstances could cause us to either materially increase or reduce the carrying amount of our tax reserves.

Our deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and their basis for income tax purposes, and the temporary differences created by the tax effects of capital loss, net operating loss and tax credit carryforwards. We record valuation allowances to reduce deferred tax assets to the amounts that are more likely than not to be realized. We could recognize no benefit from our deferred tax assets or we could recognize some or all of the future benefit depending on the amount and timing of taxable income we generate in the future.

We intend to indefinitely reinvest substantially all of our foreign earnings in our foreign subsidiaries unless there is a tax–free manner under which to remit the earnings. The current analysis indicates that we have sufficient U.S. liquidity, including borrowing capacity, to fund foreseeable U.S. cash needs without requiring the repatriation of foreign cash. The 2017 Tax Act imposed a Toll Tax on a deemed repatriation of undistributed earnings of foreign subsidiaries. One time or unusual items that may impact our ability or intent to keep the foreign earnings and cash indefinitely reinvested include significant U.S. acquisitions, loans from a foreign subsidiary, and changes in tax laws.

As of December 31, 2018, the Company has not provided deferred income taxes on unrepatriated earnings from foreign subsidiaries as they are deemed to be indefinitely reinvested. Such taxes would primarily be attributable to foreign withholding taxes and local income taxes when such earnings are distributed. As such, the Company has determined the tax impact of repatriating these earnings would not be material as of December 31, 2018.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 to address the application of U.S. GAAP in situations where a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the 2017 Tax Act. The Company recognized the provisional tax impacts related to deemed repatriated earnings and the revaluation of deferred tax assets and liabilities and included these amounts in its consolidated financial statements for the year ended December 31, 2017. The Company applied the guidance of SAB No. 118 when accounting for the enactment date effects of the 2017 Tax Act in 2017 and throughout 2018. The Company finalized its calculations and completed its accounting for the income tax effect of the 2017 Tax Act in December 2018.

Loss Contingencies

We are subject to claims and lawsuits in the ordinary course of our business, including claims by employees or former employees, with respect to our products and involving commercial disputes. We accrue for loss contingencies when it is deemed probable that a loss has been incurred and that loss is estimable. The amounts accrued are based on the full amount of the estimated loss before considering insurance proceeds, if applicable, and do not include an estimate for legal fees expected to be incurred in connection with the loss contingency. We consistently accrue legal fees expected to be incurred in connection with loss contingencies as those fees are incurred by outside counsel as a period cost. Our financial statements do not reflect any material amounts related to possible unfavorable outcomes of claims and

lawsuits to which we are currently a party because we currently believe that such claims and lawsuits are not expected, individually or in the aggregate, to result in a material, adverse effect on our financial condition. However, it is possible that these contingencies could materially affect our results of operations, financial position and cash flows in a particular period if we change our assessment of the likely outcome of these matters.

Pension Benefits

The Company maintains defined benefit pension plans that cover certain employees in Austria, France, Japan, Germany and Switzerland. Various factors are considered in determining the pension liability, including the number of employees expected to be paid their salary levels and years of service, the expected return on plan assets, the discount rate used to determine the

benefit obligations, the timing of benefit payments and other actuarial assumptions. If the actual results and events for the pension plans differ from current assumptions, the benefit obligation may be over or under valued. We recognize the underfunded status of the defined benefit pension plans as an asset or a liability in the balance sheet, with changes in the funded status recorded through other comprehensive income in the year in which those changes occur.

The Company's discount rates are determined by considering current yield curves representing high quality, long-term fixed income instruments. The resulting discount rates are consistent with the duration of plan liabilities. In 2018, the discount rate was prescribed as the current yield on corporate bonds with an average rating of AA or AAA of equivalent currency and term to the liabilities.

The expected return on plan assets represents the average rate of return expected to be earned on plan assets over the period the benefits included in the benefit obligation are to be paid. In developing the expected rate of return, the Company considers returns of historical market data as well as actual returns on the plan assets. Using this reference information, the long-term return expectations for each asset category are developed according to the allocation among those investment categories.

The net plan assets of the pension plans are invested in common trusts as of December 31, 2018. Common trusts are classified as Level 2 in fair value hierarchy. The fair value of common trusts are valued at net asset value based on the fair values of the underlying investments of the trusts as determined by the sponsor of the trusts.

The following weighted average assumptions were used to develop net periodic pension benefit cost and the actuarial present value of projected pension benefit obligations for the year ended December 31, 2018 and 2017, respectively:

	As of December 31,	
	2018	2017
Discount rate	1.00%	0.74%
Expected return on plan assets	3.40%	3.08%
Rate of compensation increase	1.70%	1.70%

A change of plus (minus) 25 basis points on expected rate of return on plan assets, with other assumptions held constant, would have an estimated $0.1 million favorable (unfavorable) impact on pension plan costs. As of December 31, 2018, contributions expected to be paid to the plan in 2019 is $1.9 million.

We use the corridor approach in the valuation of defined benefit pension benefit plans. The corridor approach defers all actuarial gains and losses resulting from variances between actual results and actuarial assumptions. Those unrecognized gains and losses are amortized when the net gains and losses exceed 10% of the greater of the market-related value of plan assets or the projected benefit obligation at the beginning of the year. The amount in excess of the corridor is amortized over the average remaining service period to retirement date of active plan participants.

Stock-based Compensation

We apply the authoritative guidance for stock-based compensation. This guidance requires companies to recognize the expense related to the fair value of their stock-based compensation awards. Stock-based compensation expense for stock option awards is based on the grant date fair value on using the binomial distribution model. The Company recognizes compensation expense for stock option awards, restricted stock awards, performance stock awards and contract stock awards on a ratable basis over the requisite service period of the award. All excess tax benefits and taxes and tax deficiencies from stock-based compensation are included in the provision for income taxes in the consolidated statement of operations.

Recently Issued and Adopted Accounting Standards

Refer to Note 2, Summary of Significant Accounting Policies, to the consolidated financial statements for recently adopted accounting pronouncements and recently issued accounting pronouncements not yet adopted as of December 31, 2018.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to various market risks, including changes in foreign currency exchange rates and interest rates that could adversely affect our results of operations and financial condition. To manage the volatility relating to these typical business exposures, we may enter into various derivative transactions when appropriate. We do not hold or issue derivative instruments for trading or other speculative purposes.

Foreign Currency Exchange and Other Rate Risks

We operate on a global basis and are exposed to the risk that changes in foreign currency exchange rates could adversely affect our financial condition, results of operations and cash flows. We are primarily exposed to foreign currency exchange rate risk with respect to transactions and net assets denominated in euros ("EUR"), Swiss francs ("CHF"), British pounds ("GBP"), Canadian dollars, Japanese yen, Mexican pesos, Brazilian reais, Australian dollars and Chinese yuan. We manage the foreign currency exposure centrally, on a combined basis, which allows us to net exposures and to take advantage of any natural offsets. To mitigate

the impact of currency fluctuations on transactions denominated in nonfunctional currencies, we periodically enter into derivative financial instruments in the form of foreign currency exchange forward contracts with major financial institutions. We temporarily record realized and unrealized gains and losses on these contracts that qualify as cash flow hedges in other comprehensive income, and then recognize them in other income or expense when the hedged item affects net earnings.

From time to time, we enter into foreign currency forward exchange contracts to manage currency exposures for transactions denominated in a currency other than an entity's functional currency. As a result, the impact of foreign currency gains/losses recognized in earnings are partially offset by gains/losses on the related foreign currency forward exchange contracts in the same reporting period.

On October 1, 2018, the Company entered into cross-currency swap agreements designated as net investment hedges to partially offset the effects of foreign currency translation on foreign subsidiaries. The total notional amount of our instruments designated as net investment hedges at December 31, 2018 was $354.5 million and GBP 128.3 million. Under the terms of these contracts, which have been designated as net investment hedges, we will make interest payments in GBP and receive interest in U.S. dollars and GBP. Upon the maturity of these contracts, the Company will pay the notional amounts in EUR, GBP and CHF and receive U.S. dollars and GBP from the counterparties.

On October 2, 2017, we entered into cross currency swap agreements to convert a notional amount of $300.0 million equivalent to 291.2 million of Swiss Franc denominated intercompany loans into U.S. dollars. The CHF denominated intercompany loans were the result of the purchase of intellectual property by a subsidiary in Switzerland as part of the Codman Acquisition. The objective of these cross-currency swaps is to reduce volatility of earnings and cash flows associated with changes in the foreign currency exchange rate. Under the terms of these contracts, which have been designated as cash flow hedges, we will make interest payments in CHF and receive interest in U.S. dollars. Upon the maturity of these contracts, the Company will pay the principal amount of the loans in Swiss Francs and receive U.S. dollars from the counterparties. The total notional amount of our cross-currency swap agreements designated as cash flow hedges at December 31, 2018 were $300.0 million.

On November 28, 2017, we entered into a foreign currency forward contract, with a notional amount of $8.9 million to mitigate the foreign currency exchange risk related to certain intercompany loans denominated in CHF. The contract was not designated as a hedging instrument. The foreign currency forward contract was settled on September 28, 2018.

We maintain written policies and procedures governing our risk management activities. With respect to derivatives, changes in hedged items are generally expected to be completely offset by changes in the fair value of hedge instruments. Consequently, foreign currency exchange contracts would not subject us to material risk due to exchange rate movements, because gains and losses on these contracts offset gains and losses on the assets, liabilities or transactions being hedged.

The results of operations discussed herein have not been materially affected by inflation.

Interest Rate Risk

Cash and Cash Equivalents - We are exposed to the risk of interest rate fluctuations on the interest income earned on our cash and cash equivalents. A hypothetical 100 basis points movement in interest rates applicable to our cash and cash equivalents outstanding at December 31, 2018 would increase interest income by approximately $1.4 million on an annual basis. No significant decrease in interest income would be expected as our cash balances are earning interest at rates of approximately 2 basis points. We are subject to foreign currency exchange risk with respect to cash balances maintained in foreign currencies.

Debt - Our interest rate risk relates primarily to U.S. dollar LIBOR-indexed borrowings. We use interest rate swap derivative instruments to manage our earnings and cash flow exposure to changes in interest rates. These interest rate swaps fix the interest rate on a portion of our expected LIBOR-indexed floating-rate borrowings. The Company held the following interest rate swaps as of December 31, 2018 (dollar amounts in thousands):

Hedged Item	Current Notional Amount	Designation Date	Effective Date	Termination Date	Fixed Interest Rate	Floating Rate	Estimated Fair Value Assets (Liabilities)
3-month USD LIBOR Loan	$50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	$ 410
3-month USD LIBOR Loan	50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	415
1-month USD LIBOR Loan	50,000	July 12, 2016	December 31, 2016	June 30, 2019	0.825%	1-month USD LIBOR	418
3-month USD LIBOR Loan	50,000	February 6, 2017	June 30, 2017	June 30, 2020	1.834%	3-month USD LIBOR	619
1-month USD LIBOR Loan	100,000	February 6, 2017	June 30, 2017	June 30, 2020	1.652%	1-month USD LIBOR	1,287
1-month USD LIBOR Loan	100,000	March 27, 2017	December 31, 2017	June 30, 2021	1.971%	1-month USD LIBOR	1,246
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD LIBOR	1,491
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD LIBOR	1,460
1-month USD LIBOR Loan	100,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	418
1-month USD LIBOR Loan	50,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	162
1-month USD LIBOR Loan	200,000	December 13, 2017	January 1, 2018	December 31, 2024	2.313%	1-month USD LIBOR	2,076
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.220%	1-month USD LIBOR	(2,594)
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.199%	1-month USD LIBOR	(2,551)
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.209%	1-month USD LIBOR	(2,568)
1-month USD LIBOR Loan	100,000	December 18, 2018	December 30, 2022	December 31, 2027	2.885%	1-month USD LIBOR	(797)

1-month USD LIBOR Loan	100,000	December 18, 2018	December 30, 2022	December 31, 2027	2.867%	1-month USD LIBOR	(873)
Total interested rate derivatives designated as cash flow hedge	$1,475,000						$ 619

These interest rate swaps were designated as a cash flow hedges as of December 31, 2018.

The total notional amount of interest rate swaps in effect as of December 31, 2018 was $900 million. Based on our outstanding borrowings at December 31, 2018, a 100 basis points change in interest rates would have impacted interest expense on the unhedged portion of the debt by $4.7 million on an annualized basis.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Financial statements and the financial statement schedule specified by this Item, together with the report thereon of PricewaterhouseCoopers LLP, are presented following Item 15 of this report.

Information on quarterly results of operations is set forth in our financial statements under Note 17, “Selected Quarterly Information — Unaudited,” to our consolidated financial statements.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURES

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

We maintain disclosure controls and procedures that are designed to provide reasonable assurance that information required to be disclosed in our Exchange Act reports is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate, to allow for timely decisions regarding required disclosure. Disclosure controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Management has designed our disclosure controls and procedures to provide reasonable assurance of achieving the desired control objectives.

As required by Exchange Act Rule 13a-15(b), we have carried out an evaluation, under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, of the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2018. Based upon this evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of December 31, 2018 to provide such reasonable assurance.

Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) under the Securities Exchange Act of 1934, as amended. Internal control over financial reporting is 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 in the United States of America ("GAAP"). We recognize that 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 and procedures may deteriorate.

To evaluate the effectiveness of our internal control over financial reporting, management used the criteria described in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). Based upon this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2018.

The effectiveness of the Company's internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER INFORMATION

Not applicable.

PART III

INCORPORATION BY REFERENCE

The information called for by Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities relating to equity compensation plans, Item 10. Directors, Executive Officers and Corporate Governance, Item 11. Executive Compensation, Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters, Item 13. Certain Relationships and Related Transactions, and Director Independence and Item 14. Principal Accountant Fees and Services is incorporated herein by reference to the Company's definitive proxy statement for its Annual Meeting of Stockholders scheduled to be held on May 16, 2019, which definitive proxy statement is expected to be filed with the Commission not later than 120 days after the end of the fiscal year to which this report relates.

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PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

(a) Documents filed as a part of this report.

1. Financial Statements.

The following financial statements and financial statement schedules are filed as a part of this report:

2. Financial Statement Schedule

All other schedules not listed above have been omitted, because they are not applicable or are not required, or because the required information is included in the consolidated financial statements or notes thereto.

3. Exhibits required to be filed by Item 601 of Regulation S-K.

2.1	Stock Purchase Agreement, dated as of October 25, 2013, by and between Covidien Group S.A.R.L. and Integra LifeSciences Corporation (Incorporated by Reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on January 15, 2014)
2.2	Stock and Asset Purchase Agreement by and among Medtronic, Inc., Medtronic Xomed Instrumentation, SAS, and Integra LifeSciences Corporation, dated as of September 12, 2014 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on October 27, 2014)
2.3	Separation and Distribution Agreement between Integra LifeSciences Holdings Corporation and SeaSpine Holdings Corporation, dated as of June 30, 2015 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on July 7, 2015)
2.4	Agreement and Plan of Merger by and among Integra LifeSciences Corporation, Patriot S1, Inc., TEI Biosciences Inc. and Dr. Yiannis Monovoukas, dated as of June 26, 2015 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on July 20, 2015)
2.5	Agreement and Plan of Merger by and among Integra LifeSciences Corporation, Patriot S2, Inc., TEI Medical Inc. and Dr. Yiannis Monovoukas, dated as of June 26, 2015 (Incorporated by reference to Exhibit 2.2 to the Company's Current Report on Form 8-K filed on July 20, 2015)
2.6	Agreement and Plan of Merger by and among Integra LifeSciences Holdings Corporation, Integra Derma, Inc., and Derma Sciences, Inc. dated as of January 10, 2017 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on January 11, 2017)
2.7	Binding Offer Letter by and among Integra LifeSciences Holdings Corporation and DePuy Synthes, Inc., dated as of February 14, 2017 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on February 15, 2017
2.7(a)	Asset Purchase Agreement accepted and countersigned by DePuy Synthes, dated May 11, 2017 (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on May 15, 2017)

2.8	Asset Purchase Agreement, dated September 8, 2017, between the Company and certain of its subsidiaries and Natus Medical Incorporated (Incorporated by reference to Exhibit 2.1 to the Company's Quarterly Report on Form 10-Q filed on October 26, 2017)

3.1(a)	Amended and Restated Certificate of Incorporation of the Company dated February 16, 1993 (Incorporated by reference to Exhibit 3.1(a) to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)
3.1(b)	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Company dated May 22, 1998 (Incorporated by reference to Exhibit 3.1(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 1998)
3.1(c)	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Company dated May 17, 1999 (Incorporated by reference to Exhibit 3.1(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)
3.1(d)	Certificate of Amendment to Amended and Restated Certificate of Incorporation of the Company dated December 21, 2016 (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on December 22, 2016)
3.2(a)	Amended and Restated Bylaws of the Company, effective as of May 17, 2012 (Incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-K filed on April 13, 2012)
3.2(b)	Second Amended and Restated Bylaws of Integra LifeSciences Holdings Corporation, effective as of December 11, 2018 (Incorporated by reference to Exhibit 3.2 to the Company's Current Report on Form 8-k filed on December 12, 2018)
4.1	Purchase Agreement, dated June 9, 2011, by and between Integra LifeSciences Holdings Corporation and J.P. Morgan Securities LLC, Merrill Lynch, Pierce, Fenner & Smith Incorporated, Morgan Stanley & Co. LLC, Deutsche Bank Securities Inc., RBC Capital Markets, LLC and Wells Fargo Securities, LLC (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 15, 2011)
4.2	Indenture, dated June 15, 2011, by and between Integra LifeSciences Holdings Corporation and Wells Fargo Bank, National Association, as trustee (Incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on June 15, 2011)
4.3(a)	Credit Agreement, dated as of December 22, 2005, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Citibank FSB and SunTrust Bank, as Co-Syndication Agents, and Royal Bank of Canada and Wachovia Bank, National Association, as Co-Documentation Agents (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 29, 2005)
4.3(b)	First Amendment, dated as of February 15, 2006, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Citibank FSB and SunTrust Bank, as Co-Syndication Agents, and Royal Bank of Canada and Wachovia Bank, National Association, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.3(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)
4.3(c)	Second Amendment, dated as of February 23, 2007, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Citibank FSB and SunTrust Bank, as Co-Syndication Agents, and Royal Bank of Canada and Wachovia Bank, National Association, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on February 27, 2007)

4.3(d)	Third Amendment, dated as of June 4, 2007, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Citibank, N.A., successor by merger to Citibank, FSB, as Syndication Agent and JPMorgan Chase Bank, N.A., Deutsche Bank Trust Company Americas and Royal Bank of Canada, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 6, 2007)
4.3(e)	Fourth Amendment, dated as of September 5, 2007, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Citibank, N.A., successor by merger to Citibank FSB, as Syndication Agent and JPMorgan Chase Bank, N.A., Deutsche Bank Trust Company Americas and Royal Bank of Canada, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on September 6, 2007)
4.3(f)	Amended and Restated Credit Agreement, dated as of August 10, 2010, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, JP Morgan Chase Bank, as Syndication Agent, and HSBC Bank USA, NA, RBC Capital Markets, Wells Fargo Bank, N.A., Fifth Third Bank, DNB NOR Bank ASA and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 10, 2010)

4.3(g)	Second Amended and Restated Credit Agreement, dated as of June 8, 2011, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A. as Administrative Agent, Swing Line Lender and L/C Issuer, JPMorgan Chase Bank N.A. as Syndication Agent, and, HSBC Bank USA, NA, Royal Bank of Canada, Wells Fargo Bank, N.A., Fifth Third Bank, DNB NOR Bank ASA, and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.3 to the Company's Quarterly Report on Form 10-Q filed on July 29, 2011)
4.3(h)	First Amendment, dated as of May 11, 2012, to Second Amended and Restated Credit Agreement dated as of June 8, 2011, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, JPMorgan Chase Bank, N.A., as Syndication Agent, and HSBC Bank, NA, Royal Bank of Canada, Wells Fargo Bank, NA, Fifth Third Bank, DNB Nor Bank ASA and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 14, 2012)
4.3(i)	Second Amendment, dated as of June 21, 2013, to Second Amended and Restated Credit Agreement dated as of June 8, 2011, among Integra LifeSciences Holdings Corporation, the lenders party thereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, JPMorgan Chase Bank, N.A., as Syndication Agent, and HSBC Bank USA, National Association, Royal Bank of Canada, Wells Fargo Bank, National Association, Fifth Third Bank, DNB Bank ASA and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 24, 2013)
4.3(j)	Third Amended and Restated Credit Agreement, dated as of July 2, 2014, among Integra LifeSciences Holdings Corporation, the other lenders party hereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Wells Fargo Bank, National Association, as Syndication Agent and HSBC Bank USA, National Association, Royal Bank of Canada, Citizens Bank, National Association, DNB Capital LLC, Credit Agricole-Corporate and Investment Bank and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on July 9, 2014)
4.3(k)	First Amendment, dated as of December 19, 2014, to that Third Amended and Restated Credit Agreement, among Integra LifeSciences Holdings Corporation, a syndicate of lending banks, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Wells Fargo Bank, National Association, as Syndication Agent, and HSBC Bank USA, National Association, Royal Bank of Canada, Citizens Bank, National Association, DNB Capital LLC, Crédit Agricole-Corporate and Investment Bank, and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 29, 2014)
4.3(l)	Second Amendment, dated August 28, 2015, to that Third Amended and Restated Credit Agreement, among Integra LifeSciences Holdings Corporation, a syndicate of lending banks, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Wells Fargo Bank, National Association, as Syndication Agent, and HSBC Bank USA, National Association, Royal Bank of Canada, Citizens Bank, National Association, DNB Capital LLC, Crédit Agricole-Corporate and Investment Bank and TD Bank, N.A., as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on September 1, 2015)
4.3(m)	Fourth Amended and Restated Credit Agreement, dated as of December 7, 2016, among Integra LifeSciences Holdings Corporation, the other lenders party hereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, Securities, LLC, Citizens Bank, N.A., DNB Capital LLC, HSBC Bank PLC, HSBC Bank USA, N.A., The Bank of Tokyo-Mitsubishi UFJ, LTD., PNC Bank, N.A., Royal Bank of Canada, SunTrust Bank, TD Bank, N.A., JPMorgan and Chase Bank, N.A., Mizuho Bank, LTD., and Bank of Nova

	Scotia, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on December 7, 2016)
4.3(n)	First Amendment to the Fourth Amended and Restated Credit Agreement, dated as of March 31, 2017, among Integra LifeSciences Holdings Corporation, a syndicate of lending banks, and Bank of America, N.A., as Administrative Agent (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on April 4, 2017)
4.3(o)	Fifth Amended and Restated Credit Agreement, dated as of May 3, 2018, among Integra LifeSciences Holdings Corporation, the other lenders party hereto, Bank of America, N.A., as Administrative Agent, Swing Line Lender and L/C Issuer, JPMorgan Chase Bank, N.A. and Wells Fargo Bank, N.A., as Co-Syndication Agents, and PNC Bank, N.A., The Bank of Tokyo-Mitsubishi UFJ, Ltd., Citibank N.A., Citizens Bank, N.A., DNB Bank ASA, New York Branch, HSBC Bank plc, HSBC Bank USA, National Association, Suntrust Bank, TD Bank, N.A., Bank of Nova Scotia and Capital One, National Association, as Co-Documentation Agents (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on May 9, 2018)
4.4	Security Agreement, dated as of December 22, 2005, among Integra LifeSciences Holdings Corporation and the additional grantors party thereto in favor of Bank of America, N.A., as administrative and collateral agent (Incorporated by reference to Exhibit 4.4 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)

4.5	Pledge Agreement, dated as of December 22, 2005, among Integra LifeSciences Holdings Corporation and the additional grantors party thereto in favor of Bank of America, N.A., as administrative and collateral agent (Incorporated by reference to Exhibit 4.5 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)
4.6	Subsidiary Guaranty Agreement, dated as of December 22, 2005, among the guarantors party thereto and individually as a "Guarantor"), in favor of Bank of America, N.A., as administrative and collateral agent (Incorporated by reference to Exhibit 4.6 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)
4.7	Indenture, dated June 11, 2007, among Integra LifeSciences Holdings Corporation, Integra LifeSciences Corporation and Wells Fargo Bank, N.A., as trustee (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 12, 2007)
4.8	Form of 2.75% Senior Convertible Note due 2010 (included in Exhibit 4.8) (Incorporated by reference to Exhibit B to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on June 12, 2007)
4.9	Indenture, dated June 11, 2007, among Integra LifeSciences Holdings Corporation, Integra LifeSciences Corporation and Wells Fargo Bank, N.A., as trustee (Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on June 12, 2007)
4.10	Form of 2.375% Senior Convertible Note due 2012 (included in Exhibit 4.10) (Incorporated by reference to Exhibit B to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on June 12, 2007)
4.11	Registration Rights Agreement, dated June 11, 2007, among Integra LifeSciences Holdings Corporation, Banc of America Securities LLC, J.P. Morgan Securities Inc. and Morgan Stanley & Co., Incorporated, as representatives of the several initial purchasers (Incorporated by reference to Exhibit 4.5 to the Company's Current Report on Form 8-K filed on June 12, 2007)
4.12	Registration Rights Agreement, dated June 11, 2007, among Integra LifeSciences Holdings Corporation, Banc of America Securities LLC, J.P. Morgan Securities Inc. and Morgan Stanley & Co., Incorporated, as representatives of the several initial purchasers (Incorporated by reference to Exhibit 4.6 to the Company's Current Report on Form 8-K filed on June 12, 2007)
10.1(b)	Lease Modification #2 entered into as of October 28, 2005, by and between Plainsboro Associates and Integra LifeSciences Corporation (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 2, 2005)
10.1(c)	Lease Modification #3 entered into as of March 2, 2011, by and between Plainsboro Associates and Integra LifeSciences Corporation (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on March 3, 2011)
10.1(d)	Lease Modification #4 entered into as of April 20, 2017, by and between Plainsboro Associates and Integra LifeSciences Corporation (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 25, 2017)
10.2 (a)	Equipment Lease Agreement between Medicus Corporation and the Company, dated as of June 1, 2000 (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2000)

10.2(b)	First Amendment to Equipment Lease Agreement between Medicus Corporation and the Company, dated as of June 29, 2010 (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2010)
10.3(b)	Form of Indemnification Agreement for Non-Employee Directors and Officers (effective prior to February 15, 2019) (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 24, 2008)*
10.3(c)	10.3 (c) Form of Indemnification Agreement for Non-Employee Director and Officers effective February 15, 2019. *
10.4	1996 Incentive Stock Option and Non-Qualified Stock Option Plan (as amended through December 27, 1997) (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on February 3, 1998)*
10.5	1998 Stock Option Plan (amended and restated as of July 26, 2005) (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005)*

10.6	1999 Stock Option Plan (amended and restated as of July 26, 2005) (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005)*
10.7(a)	Employee Stock Purchase Plan (as amended on May 17, 2004) (Incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 (Registration No. 333-127488) filed on August 12, 2005)*
10.7(b)	First Amendment to Employee Stock Purchase Plan, dated October 26, 2005 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 1, 2005)*
10.8(a)	2000 Equity Incentive Plan (amended and restated as of July 26, 2005) (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005)*
10.8(b)	Amendment to 2000 Equity Incentive Plan (effective as of May 17, 2012) (Incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)*
10.8(c)	Amendment to 2000 Equity Incentive Plan (effective as of January 1, 2013) (Incorporated by reference to Exhibit 10.8(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.9(a)	2001 Equity Incentive Plan (amended and restated as of July 26, 2005) (Incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2005)*
10.9(b)	Amendment to 2001 Equity Incentive Plan (effective as of May 17, 2012) (Incorporated by reference to Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)*
10.9(c)	Amendment to 2001 Equity Incentive Plan (effective as of January 1, 2013) (Incorporated by reference to Exhibit 10.9(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.10(a)	Second Amended and Restated 2003 Equity Incentive Plan effective May 19, 2010 (Incorporated by reference to Exhibit 10 to the Company's Current Report on Form 8-K filed May 21, 2010)*
10.10(b)	Amendment to the Second Amended and Restated 2003 Equity Incentive Plan effective May 17, 2012 (Incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)*
10.10(c)	Amendment to the Second Amended and Restated 2003 Equity Incentive Plan effective January 1, 2013 (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013)*
10.10(d)	Third Amended and Restated 2003 Equity Incentive Plan effective May 22, 2015 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 29, 2015)*
10.10(e)	Fourth Amended and Restated 2003 Equity Incentive Plan, effective May 23, 2017 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 25, 2017)
10.11(a)	Second Amended and Restated Employment Agreement dated July 27, 2004 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004)*
10.11(b)	

	Amendment 2006-1, dated as of December 19, 2006, to the Second Amended and Restated Employment Agreement, between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 22, 2006)*
10.11(c)	Amendment 2008-1, dated as of March 6, 2008, to the Second Amended and Restated Employment Agreement, between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.12(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2007)*
10.11(d)	Amendment 2008-2, dated as of August 6, 2008, to the Second Amended and Restated Employment Agreement between Stuart M. Essig and the Company (Incorporated by reference to Exhibit 10.7 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008)*
10.11(e)	Amendment 2009-1, dated as of April 13, 2009, to the Second Amended and Restated Employment Agreement between Stuart M. Essig and the Company (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 13, 2009)*
10.11(f)	Letter Agreement dated May 17, 2011 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed May 23, 2011)*
10.11(g)	Letter dated December 20, 2011 from Stuart M. Essig to the Company (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed December 23, 2011)*

10.11(h)	Letter Agreement dated June 7, 2012 between Stuart M. Essig and the Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 7, 2012)*
10.12	Indemnity letter agreement dated December 27, 1997 from the Company to Stuart M. Essig (Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on February 3, 1998)*
10.13(a)	Registration Rights Provisions for Stuart M. Essig (Incorporated by reference to Exhibit B of Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 3, 1998)*
10.13(b)	Registration Rights Provisions for Stuart M. Essig (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on January 8, 2001)*
10.13(c)	Registration Rights Provisions for Stuart M. Essig (Incorporated by reference to Exhibit B of Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2004)*
10.14(a)	Amended and Restated 2005 Employment Agreement between John B. Henneman, III and the Company dated December 19, 2005 (Incorporated by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K for the year ended December 31, 2005)*
10.14(b)	Amendment 2008-1, dated as of January 2, 2008, to the Amended and Restated 2005 Employment Agreement between John B. Henneman, III and the Company (Incorporated by reference to Exhibit 10.15(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2007)*
10.14(c)	Amendment 2008-2, dated as of December 18, 2008, to the Amended and Restated 2005 Employment Agreement between John B. Henneman, III and the Company (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 24, 2008)*
10.14(d)	Amendment 2009-1, dated as of April 13, 2009, to the Amended and Restated 2005 Employment Agreement between John B. Henneman, III and the Company (Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on April 13, 2009)*
10.14(e)	Amendment 2010-1, dated as of October 12, 2010, to the Amended and Restated 2005 Employment Agreement between John B. Henneman, III and the Company (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed October 12, 2010)*
10.14(f)	Letter dated as of February 22, 2012 from John B. Henneman, III to the Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed February 22, 2012)*
10.14(g)	Second Amended and Restated 2005 Employment Agreement between the Company and John B. Henneman, III (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 23, 2014)*
10.15	Consulting Agreement, dated October 12, 2010, between the Company and Inception Surgical (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on October 12, 2010)*
10.16	Severance Agreement between Richard D. Gorelick and the Company dated as of January 3, 2012 (Incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013)*

10.17(a)	Severance Agreement between Judith O'Grady and the Company dated as of January 4, 2010 (Incorporated by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K for the year ended December 31, 2009)*
10.17(b)	Severance Agreement between Judith O'Grady and the Company dated as of January 3, 2011 (Incorporated by reference to Exhibit 10.17(a) to the Company's Annual Report on Form 10-K for the year ended December 31, 2010)*
10.17(c)	Severance Agreement between Judith O'Grady and the Company dated as of January 3, 2012 (Incorporated by reference to Exhibit 10.16(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2011)*
10.18(a)	Employment Agreement, dated as of October 12, 2010, between Peter J. Arduini and the Company (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed October 12, 2010)*
10.18(b)	Amended and Restated Employment Agreement dated December 20, 2011 between Peter J. Arduini and the Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed December 23, 2011)*

10.18(c)	Second Amended and Restated Employment Agreement between the Company and Peter J. Arduini (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 20, 2014)*
10.18(d)	Third Amended and Restated Employment Agreement between the Company and Peter J. Arduini (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on October 26, 2017)*
10.19	Form of Notice of Stock Option Grant with Eight-Year Term for Peter J. Arduini (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed December 23, 2011)*
10.20	Letter Agreement dated February 19, 2013 between Peter J. Arduini and Integra LifeSciences Holdings Corporation (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 25, 2013)*
10.21(a)	Lease Contract, dated April 1, 2005, between the Puerto Rico Industrial Development Company and Integra CI, Inc. (executed on September 15, 2006) (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended September 30, 2006)
10.21(b)	Amendment to Lease Contract dated as of November 2, 2011, between Integra CI, Inc. and Puerto Rico Industrial Development Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 7, 2011)
10.21(c)	Termination of Amendment to Lease Contract, dated as of April 2, 2012, between Integra CI, Inc. and Puerto Rico Industrial Development Company (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2012)
10.22	Restricted Units Agreement dated December 27, 1997 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 3, 1998)*
10.23	Stock Option Grant and Agreement pursuant to 1999 Stock Option Plan dated December 22, 2000 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on January 8, 2001)*
10.24	Stock Option Grant and Agreement pursuant to 2000 Equity Incentive Plan dated December 22, 2000 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on January 8, 2001)*
10.25(a)	Restricted Units Agreement dated December 22, 2000 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on January 8, 2001)*
10.25(b)	Amendment 2006-1, dated as of October 30, 2006, to the Stuart M. Essig Restricted Units Agreement dated as of December 22, 2000 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on November 3, 2006)*
10.26	Stock Option Grant and Agreement pursuant to 2003 Equity Incentive Plan dated July 27, 2004 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.30 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*

10.27(a)	Contract Stock/Restricted Units Agreement pursuant to 2003 Equity Incentive Plan dated July 27, 2004 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.31 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*
10.27(b)	Amendment 2006-1, dated as of October 30, 2006, to the Stuart M. Essig Contract Stock/Restricted Units Agreement dated as of July 27, 2004 (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on November 3, 2006)*
10.27(c)	Amendment 2008-1, dated as of March 6, 2008, to the Stuart M. Essig Contract Stock/Restricted Units Agreement dated as of July 27, 2004 (Incorporated by reference to Exhibit 10.25(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2007)*
10.27(d)	Amendment 2011-1, dated as of May 17, 2011, to the Stuart M. Essig Contract Stock/Restricted Units Agreement dated as of July 24, 2004 (Incorporated by reference to Exhibit 10.6 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)*
10.28	Contract Stock/Units Agreement dated as of May 17, 2011 between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 23, 2011)*

10.29	Form of Amendment 2011-1 to Contract Stock/Restricted Units Agreements between the Company and Mr. Essig (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)*
10.30	Form of Stock Option Grant and Agreement between the Company and Stuart M. Essig (Incorporated by reference to Exhibit 10.32 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*
10.31(a)	Form of Contract Stock/Restricted Units Agreement for Stuart M. Essig (Incorporated by reference to Exhibit 10.8 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008)*
10.31(b)	New Form of Contract Stock/Restricted Units Agreement (for Annual Equity Awards) for Stuart M. Essig (Incorporated by reference to Exhibit 10.28(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2010)*
10.31(c)	Form of Amendment 2011-1 to Contract Stock/Restricted Units Agreement between the Company and Mr. Essig (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)*
10.32	Form of Performance Stock Agreement for Stuart M. Essig (Incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008)*
10.33	Form of Restricted Stock Agreement for Stuart M. Essig for 2009 (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed April 13, 2009)*
10.34(a)	Form of Performance Stock Agreement (Executive Officers) (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 25, 2013)*
10.34(b)	Form of Performance Stock Agreement (Executive Officers) (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 29, 2016)*
10.34(c)	Form of Performance Stock Agreement for Peter J. Arduini (Incorporated by reference to Exhibit 10.2 to the Company's Report on Form 8-K filed on February 29, 2016)*
10.34(d)	Form of Performance Stock Agreement (Executive Officers) (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018) *
10.34(e)	Form of Performance Stock Agreement for Peter J. Arduini (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2018)*
10.35	Performance Incentive Compensation Plan effective January 1, 2013 (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2013)*
10.35(a)	First Amendment, dated as of February 15, 2017, to the Performance Incentive Compensation Plan (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 17, 2017)

10.35(b)	2018 Performance Incentive Compensation Plan, effective January 1, 2018 (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on May 25, 2017)
10.36	New Form of Contract Stock/Restricted Units Agreement pursuant to 2003 Equity Incentive Plan (for 2011) Annual Equity Award for Stuart M. Essig) (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2011)*
10.37	Form of Notice of Grant of Stock Option and Stock Option Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 29, 2005)*
10.38	Form of Non-Qualified Stock Option Agreement (Non-Directors) (Incorporated by reference to Exhibit 10.35 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*
10.39	Form of Incentive Stock Option Agreement (Incorporated by reference to Exhibit 10.36 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*
10.40	Form of Non-Qualified Stock Option Agreement (Directors) (Incorporated by reference to Exhibit 10.37 to the Company's Annual Report on Form 10-K for the year ended December 31, 2004)*
10.41	Form of Stock Option Agreement (Executive Officers) (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)*

10.42	Form of Stock Option Agreement for Glenn Coleman (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)*
10.43(a)	Agreement and General Release by and between Robert Paltridge and Integra LifeSciences Corporation (Incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2015)*
10.43(b)	Agreement and General Release by and between Richard D. Gorelick and Integra LifeSciences Corporation
10.44(c)	Form of Change in Control Severance Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 3, 2016)*
10.44(d)	Form of Change in Control Severance Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 3, 2017)
10.44(e)	Form of Change in Control Severance Agreement (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 2, 2018)*
10.45(a)	Compensation of Directors of the Company effective May 17, 2011 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 16, 2010)*
10.45(b)	Compensation of Non-Employee Directors of the Company effective May 17, 2012 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 13, 2012)*
10.45(c)	Compensation of Non-Employee Directors of the Company effective May 22, 2013 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 14, 2012)*
10.45(d)	Compensation of Non-Employee Directors of the Company effective July 24, 2013 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 29, 2013)*
10.45(e)	Compensation of Non-Employee Directors of the Company effective May 22, 2015 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 18, 2014)*
10.45(f)	Compensation of Non-Employee Directors of the Company effective May 24, 2016 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 17, 2015)*
10.46(a)	Form of Restricted Stock Agreement for Non-Employee Directors under the 2003 Equity Incentive Plan (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)*
10.46(b)	New Form of Restricted Stock Agreement for Non-Employee Directors under the 2003 Equity Incentive Plan (Incorporated by reference to Exhibit 10.38(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.46(c)	Form of Restricted Stock Agreement for Executive Officers - Annual Vesting (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 25, 2009)*
10.46(d)	Form of Restricted Stock Agreement for Executive Officers - Annual Vesting (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)*

10.46(e)	New Form of Restricted Stock Agreement for Executive Officers - Annual Vesting (Incorporated by reference to Exhibit 10.38(e) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.46(f)	Form of Restricted Stock Agreement for Executive Officers - Cliff Vesting (Incorporated by reference to Exhibit 10.8 to the Company's Quarter Report on Form 10-Q for the quarter ended March 31, 2009)*
10.46(g)	Form of Restricted Stock Agreement for Executive Officers - Cliff Vesting (Incorporated by reference to Exhibit 10.6 to the Company's quarterly report on Form 10-Q for the quarter ended June 30, 2012)*
10.46(h)	New Form of Restricted Stock Agreement for Executive Officers - Cliff Vesting (Incorporated by reference to Exhibit 10.38(h) to the Company's Annual Report on Form 10-K for the year ended December 31, 2012)*
10.46(i)	Form of Restricted Stock Agreement for Mr. Henneman for 2008 and 2009 (Incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on April 13, 2009)*
10.46(j)	Form of Contract Stock/Restricted Units Agreement pursuant to 2003 Equity Incentive Plan for Mr. Henneman (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on December 24, 2008)*

10.46(k)	Form of Option Agreement for John B. Henneman, III (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 6, 2008)*
10.46(l)	Form of Performance Stock Agreement for John B. Henneman, III (Incorporated by reference to Exhibit 10.37(b) to the Company's Annual Report on Form 10-K for the year ended December 31, 2007)*
10.46(m)	Form of Contract Stock/Restricted Units Agreement (for Signing Grant) for Mr. Arduini (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on October 12, 2010)*
10.46(n)	Form of Contract Stock/Restricted Units Agreement (for Annual Equity Awards) for Mr. Arduini (Incorporated by reference to Exhibit 10.5 to the Company's Current Report on Form 8-K filed on October 12, 2010)*
10.46(o)	Form of Non-Qualified Stock Option Agreement for Mr. Arduini (Incorporated by reference to Exhibit 10.6 to the Company's Current Report on Form 8-K filed on October 12, 2010)*
10.46(p)	Form of Restricted Stock Agreement for Mr. Henneman (Incorporated by reference to Exhibit 10.7 to the Company's Current Report on Form 8-K filed on October 12, 2010)*
10.46(q)	Form of Restricted Stock Agreement (Annual Vesting) for Mr. Henneman (Incorporated by reference to Exhibit 10.39(n) to the Company's Annual Report on Form 10-K for the year ended December 31, 2011)*
10.47(a)	Coleman Promotion Summary, effective December 1, 2016 (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 5, 2016)*
10.47(b)	Davis Promotion Summary, effective December 1, 2016 (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 5, 2016)*
10.48	Annual Executive Physical Medical Exam Arrangement (Incorporated by reference to the Exhibit 10.2 to the Company's Current Report on Form 8-K filed on July 29, 2013)*
10.49	Reimbursement of Legal Fees Arrangement for CFO (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on July 29, 2013)*
10.50	Amended and Restated Management Incentive Compensation Plan, as of January 1, 2008 (Incorporated by reference to Exhibit 10.43(c) to the Company's Annual Report on Form 10-K for the year ended December 31, 2007)*
10.51	Form of 2010 Convertible Bond Hedge Transaction Confirmation, dated June 6, 2007, between Integra LifeSciences Holdings Corporation and dealer (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 12, 2007)
10.52	Form of 2012 Convertible Bond Hedge Transaction Confirmation, dated June 6, 2007, between Integra LifeSciences Holdings Corporation and dealer (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on June 12, 2007)
10.53	

	Form of 2010 Amended and Restated Issuer Warrant Transaction Confirmation, dated June 6, 2007, between Integra LifeSciences Holdings Corporation and dealer (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on June 12, 2007)
10.54	Form of 2012 Amended and Restated Issuer Warrant Transaction Confirmation, dated June 6, 2007, between Integra LifeSciences Holdings Corporation and dealer (Incorporated by reference to Exhibit 10.4 to the Company's Current Report on Form 8-K filed on June 12, 2007)
10.55	Letter Agreement, dated June 9, 2011, between Deutsche Bank AG, London Branch and Integra LifeSciences Holdings Corporation, regarding the Base Call Option Transaction (Incorporated by reference to Exhibit 10.4 to the Company's Form 8-K filed on June 15, 2011)
10.56	Letter Agreement, dated June 9, 2011, between Royal Bank of Canada and Integra LifeSciences Holdings Corporation, regarding the Base Call Option Transaction (Incorporated by reference to Exhibit 10.8 to the Company's Form 8-K filed on June 15, 2011)
10.57	Letter Agreement, dated June 9, 2011, between The Royal Bank of Scotland plc and Integra LifeSciences Holdings Corporation, regarding the Base Call Option Transaction (Incorporated by reference to Exhibit 10.6 to the Company's Form 8-K filed on June 15, 2011)
10.58	Letter Agreement, dated June 9, 2011, between Wells Fargo Bank, National Association and Integra LifeSciences Holdings Corporation, regarding the Base Call Option Transaction (Incorporated by reference to Exhibit 10.2 to the Company's Form 8-K filed on June 15, 2011)

10.59	Letter Agreement, dated June 9, 2011, between Deutsche Bank AG, London Branch and Integra LifeSciences Holdings Corporation, regarding the Base Warrant Transaction (Incorporated by reference to Exhibit 10.3 to the Company's Form 8-K filed on June 15, 2011)
10.60	Letter Agreement, dated June 9, 2011, between Royal Bank of Canada and Integra LifeSciences Holdings Corporation, regarding the Base Warrant Transaction (Incorporated by reference to Exhibit 10.7 to the Company's Form 8-K filed on June 15, 2011)
10.61	Letter Agreement, dated June 9, 2011, between The Royal Bank of Scotland plc and Integra LifeSciences Holdings Corporation, regarding the Base Warrant Transaction (Incorporated by reference to Exhibit 10.5 to the Company's Form 8-K filed on June 15, 2011)
10.62	Letter Agreement, dated June 9, 2011, between Wells Fargo Bank, National Association and Integra LifeSciences Holdings Corporation, regarding the Base Warrant Transaction (Incorporated by reference to Exhibit 10.1 to the Company's Form 8-K filed on June 15, 2011)
10.63	Letter Agreement, dated June 14, 2011, between Deutsche Bank AG, London Branch and Integra LifeSciences Holdings Corporation, regarding the Additional Call Option Transaction (Incorporated by reference to Exhibit 10.9 to the Company's Form 8-K filed on June 15, 2011)
10.64	Letter Agreement, dated June 14, 2011, between Royal Bank of Canada and Integra LifeSciences Holdings Corporation, regarding the Additional Call Option Transaction (Incorporated by reference to Exhibit 10.10 to the Company's Form 8-K filed on June 15, 2011)
10.65	Letter Agreement, dated June 14, 2011, between The Royal Bank of Scotland plc and Integra LifeSciences Holdings Corporation, regarding the Additional Call Option Transaction (Incorporated by reference to Exhibit 10.11 to the Company's Form 8-K filed on June 15, 2011)
10.66	Letter Agreement, dated June 14, 2011, between Wells Fargo Bank, National Association and Integra LifeSciences Holdings Corporation, regarding the Additional Call Option Transaction (Incorporated by reference to Exhibit 10.12 to the Company's Form 8-K filed on June 15, 2011)
10.67	Letter Agreement, dated June 14, 2011, between Deutsche Bank AG, London Branch and Integra LifeSciences Holdings Corporation, regarding the Additional Warrant Transaction (Incorporated by reference to Exhibit 10.13 to the Company's Form 8-K filed on June 15, 2011)
10.68	Letter Agreement, dated June 14, 2011, between Royal Bank of Canada and Integra LifeSciences Holdings Corporation, regarding the Additional Warrant Transaction (Incorporated by reference to Exhibit 10.14 to the Company's Form 8-K filed on June 15, 2011)
10.69	Letter Agreement, dated June 14, 2011, between The Royal Bank of Scotland plc and Integra LifeSciences Holdings Corporation, regarding the Additional Warrant Transaction (Incorporated by reference to Exhibit 10.15 to the Company's Form 8-K filed on June 15, 2011)
10.70	Letter Agreement, dated June 14, 2011, between Wells Fargo Bank, National Association and Integra LifeSciences Holdings Corporation, regarding the Additional Warrant Transaction (Incorporated by reference to Exhibit 10.16 to the Company's Form 8-K filed on June 15, 2011)
10.71	Piggyback Registration Rights Agreement dated December 22, 2008 between Integra LifeSciences Holdings Corporation and George Heenan, Thomas Gilliam and Michael Evers, as trustees of The Bruce A. LeVahn

	2008 Trust and Steven M. LeVahn (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 29, 2008)
10.72(a)	Lease Agreement between 109 Morgan Lane, LLC and Integra LifeSciences Corporation, dated May 15, 2008 (Incorporated by reference to Exhibit 10.10 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2008)
10.72(b)	First Amendment to Lease Agreement between 109 Morgan Lane, LLC and Integra LifeSciences Corporation, dated March 9, 2009 (Incorporated by reference to Exhibit 10.9 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2009)
10.72(c)	Lease Agreement dated as of July 1, 2013, between 109 Morgan Lane, LLC and Integra LifeSciences Corporation (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on July 1, 2013)
10.73	Offer Letter between Glenn Coleman and the Company (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 29, 2014)*

10.74(a)	Receivables Financing Agreement, dated as of December 21, 2018, by and among Integra Receivables LLC, Integra LifeSciences Sales LLC, as Servicer, PNC Bank, National Association, as Administrative Agent, PNC Capital Markets LLC, as Structuring Agent, and certain lenders and group agents that are parties thereto from time to time (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 28, 2018)
10.74(b)	Purchase and Sale Agreement, dated as of December 21, 2018, by and among Integra LifeSciences Sales LLC, Integra LifeSciences Corporation and Integra Receivables LLC (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 28, 2018)
12.1	Statement Regarding the Computation of Ratio of Earnings to Fixed Charges and Preferred Share Dividends for the Years Ended 2015, 2014, 2013, 2012 and 2011, and the Nine Months Ended September 30, 2016 (Incorporated by reference to Exhibit 12.1 to the Company's Registration Statement on Form S-3 ASR filed November 4, 2016)
18.1	Preferability letter of Independent Public Accounting Firm dated May 1, 2014 (Incorporated by reference to Exhibit 18 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2014)
18.2	Preferability Letter of Independent Public Accounting Firm dated July 31, 2012 (Incorporated by reference to Exhibit 18.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)
21	Subsidiaries of the Company+
23	Consent of PricewaterhouseCoopers LLP+
31.1	Certification of Principal Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002+
31.2	Certification of Principal Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002+
32.1	Certification of Principal Executive Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002+
32.2	Certification of Principal Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002+
99.1	Letter, dated December 21, 2011, from the United States Food and Drug Administration to Integra LifeSciences Corporation (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on January 5, 2012)
99.2	Food and Drug Administration Form FDA-483, dated July 30, 2012, relating to inspection of Plainsboro, NJ manufacturing facility (Incorporated by reference to Exhibit 99.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2012)
99.3	Letter, dated November 1, 2012, from the United States Food and Drug Administration to Integra NeuroSciences Ltd. (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on November 13, 2012)
99.4	Letter, dated February 13, 2013, from the United States Federal Drug Administration to Integra LifeSciences Corporation (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on February 19, 2013)
99.5	Letter, dated September 24, 2013, from the United States Federal Drug Administration to Integra LifeSciences Corporation (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on September 27, 2013)

99.6	Food and Drug Administration Form FDA-483, dated November 26, 2013, relating to the inspection of the Añasco Facility (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on December 3, 2013)
99.7	Letter, dated January 14, 2015, from the United States Food and Drug Administration to Integra LifeSciences Corporation (Incorporated by reference to Exhibit 99.1 to the Company's Current Report on Form 8-K filed on January 20, 2015)
99.8	Letter, dated May 29, 2015, from the United States Food and Drug Administration to TEI Biosciences Inc. (Incorporated by reference to Exhibit 99.1 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015)
99.9	Letter, dated June 30, 2015, from the United States Food and Drug Administration to Integra LifeSciences (Ireland) Limited (Incorporated by reference to Exhibit 99.2 to the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2015)
101.INS	XBRL Instance Document+#

101.SCH XBRL Taxonomy Extension Schema Document+#

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document+#

101.DEF XBRL Definition Linkbase Document

101.LAB XBRL Taxonomy Extension Labels Linkbase Document+#

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document+#

* Indicates a management contract or compensatory plan or arrangement.

+ Indicates this document is filed as an exhibit herewith.

The financial information of Integra LifeSciences Holdings Corporation Annual Report on Form 10-K for the year ended December 31, 2018 filed on February 26, 2019 formatted in XBRL (Extensible Business Reporting Language): (i) the Consolidated Statements of Operations, (ii) the Consolidated Statement of Comprehensive Income (Loss), (iii) the Consolidated Balance Sheets, (iv) Parenthetical Data to the Consolidated Balance Sheets, (v) the Consolidated Statements of Cash Flows, (vi) the Consolidated Statements of Changes in Stockholders' Equity, and (vii) Notes to Consolidated Financial Statements, is furnished electronically herewith.

The Company's Commission File Number for Reports on Form 10-K, Form 10-Q and Form 8-K is 0-26224.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

Pursuant to the requirements of Section 13 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.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION

By: /s/ Peter J. Arduini
Peter J. Arduini
President and Chief Executive Officer

Date: February 26, 2019

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 in the capacities indicated.

Signature	Title	Date
/s/ Peter J. Arduini Peter J. Arduini	President and Chief Executive Officer, and Director (Principal Executive Officer)	February 26, 2019
/s/ Glenn G. Coleman Glenn G. Coleman	Corporate Vice President and Chief Financial Officer (Principal Financial Officer)	February 26, 2019
/s/ Jeffrey A. Mosebrook Jeffrey A. Mosebrook	Vice President, Corporate Controller (Principal Accounting Officer)	February 26, 2019
/s/ Stuart M. Essig, Ph.D. Stuart M. Essig, Ph.D.	Chairman of the Board	February 26, 2019
/s/ Rhonda Germany Ballintyn Rhonda Germany Ballintyn	Director	February 26, 2019
/s/ Keith Bradley, Ph.D. Keith Bradley, Ph.D.	Director	February 26, 2019
/s/ Barbara B. Hill Barbara B. Hill	Director	February 26, 2019
/s/ Lloyd W. Howell, Jr. Lloyd W. Howell, Jr.	Director	February 26, 2019
/s/ Donald E. Morel, Jr., Ph.D. Donald E. Morel, Jr., Ph.D.	Director	February 26, 2019
/s/ Raymond G. Murphy Raymond G. Murphy	Director	February 26, 2019
/s/ Christian S. Schade Christian S. Schade	Director	February 26, 2019

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of
Integra LifeSciences Holdings Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Integra LifeSciences Holdings Corporation and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and 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, 2018, including the related notes and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express opinions on the Company’s consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (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 audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated

financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

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 (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) 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/ PricewaterhouseCoopers LLP
Florham Park, New Jersey
February 26, 2019

We have served as the Company's auditor since 1989.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended December 31,		
	2018	2017	2016
	(In thousands, except per share amounts)		
Total revenue, net	$1,472,441	$1,188,236	$992,075
Costs and Expenses:			
Cost of goods sold	571,496	435,511	349,089
Research and development	78,041	63,455	58,155
Selling, general and administrative	690,746	624,096	455,629
Intangible asset amortization	21,160	20,370	13,862
Total costs and expenses	1,361,443	1,143,432	876,735
Operating income	110,998	44,804	115,340
Interest income	2,800	255	24
Interest expense	(64,683)	(35,019)	(25,803)
Other income, net	8,288	1,345	845
Income before income taxes	57,403	11,385	90,406
(Benefit from) provision for income taxes	(3,398)	(53,358)	15,842
Net income	$60,801	$64,743	$74,564
Basic net income per common share	$0.73	$0.84	$1.00
Diluted net income per common share	$0.72	$0.82	$0.94
Weighted average common shares outstanding (See Note 13):			
Basic	82,857	76,897	74,386
Diluted	83,999	79,121	79,194

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

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
Net income	$60,801	$64,743	$74,564
Other comprehensive income (loss), before tax:			
Change in foreign currency translation adjustments	(19,159)	37,454	(10,278)
Unrealized gain (loss) on derivatives			
Unrealized derivative (loss) gain arising during period	11,709	(3,425)	1,871
Less: Reclassification adjustments for gains included in net income	13,400	2,958	—
Unrealized (loss) gain on derivatives	(1,691)	(6,383)	1,871
Defined benefit pension plan - net (loss) gain arising during period	(643)	(57)	(45)
Total other comprehensive income (loss), before tax	(21,493)	31,014	(8,452)
Income tax benefit (expense) related to items in other comprehensive loss	(143)	2,333	(800)
Total other comprehensive income (loss), net of tax	(21,636)	33,347	(9,252)
Comprehensive income, net of tax	$39,165	$98,090	$65,312

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

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
CONSOLIDATED BALANCE SHEETS

	December 31,	
	2018	2017
	(In thousands)	
ASSETS		
Current Assets:		
Cash and cash equivalents	$138,838	$174,935
Trade accounts receivable, net of allowances of $3,719 and $8,882	265,737	251,799
Inventories, net	280,347	296,332
Prepaid expenses and other current assets	90,160	99,080
Total current assets	775,082	822,146
Property, plant and equipment, net	300,112	269,251
Intangible assets, net	1,079,496	1,159,627
Goodwill	926,475	937,905
Deferred tax assets	6,805	6,250
Other assets	19,917	16,078
Total assets	$3,107,887	$3,211,257
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities:		
Borrowings under senior credit facility	$22,500	$60,000
Accounts payable, trade	76,050	93,967
Deferred revenue	3,764	11,051
Accrued compensation	75,693	73,392
Short-term portion of contingent consideration	—	22,793
Accrued expenses and other current liabilities	84,545	87,708
Total current liabilities	262,552	348,911
Long-term borrowings under senior credit facility	1,210,513	1,781,142
Long-term borrowings under securitization facility	121,200	—
Deferred tax liabilities	57,778	65,130
Other liabilities	80,048	53,768
Total liabilities	1,732,091	2,248,951
Commitments and contingencies (Refer to Note 15)		
Stockholders' Equity:		
Preferred Stock; no par value; 15,000 authorized shares; none outstanding	—	—
Common stock; $0.01 par value; 240,000 authorized shares; 88,044 and 81,306 issued at December 31, 2018 and 2017, respectively	880	813
Additional paid-in capital	1,192,601	821,758
Treasury stock, at cost; 2,881 and 2,912 shares at December 31, 2018 and 2017, respectively	(120,615)	(121,644)
Accumulated other comprehensive loss	(45,443)	(23,807)
Retained earnings	348,373	285,186
Total stockholders' equity	1,375,796	962,306
Total liabilities and stockholders' equity	$3,107,887	$3,211,257

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

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended December 31,		
	2018	2017	2016
	(In thousands)		
OPERATING ACTIVITIES:			
Net income	$60,801	$64,743	$74,564
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	110,730	88,945	72,665
Non-cash impairment charges	4,941	3,290	—
Deferred income tax benefit	(8,184)	(67,304)	(6,474)
Share-based compensation	20,779	21,550	17,310
Amortization of debt issuance costs	6,270	2,722	2,529
Non-cash interest expense	—	—	8,074
Realized loss on sale of short-term investments	—	2,287	—
Loss on disposal of property and equipment	1,385	6,989	1,765
Gain on divestiture of business	—	(2,645)	—
Change in fair value of contingent consideration and others	1,214	(4,710)	(13)
Payment of accreted interest	—	—	(42,786)
Changes in assets and liabilities, net of business acquisitions:			
Accounts receivable	(17,021)	(89,698)	(17,518)
Inventories	8,300	99	(9,576)
Prepaid expenses and other current assets	3,933	(33,808)	14,912
Other non-current assets	1,052	(914)	(475)
Accounts payable, accrued expenses and other current liabilities	3,588	95,321	(414)
Deferred revenue	1,504	3,874	1,251
Other non-current liabilities	391	23,803	591
Net cash provided by operating activities	199,683	114,544	116,405
INVESTING ACTIVITIES:			
Change in restricted cash	—	—	4,165
Proceeds from sale of short-term investments	—	16,951	—
Proceeds from note receivable	910	483	—
Cash used in business acquisitions, net of cash acquired	26,704	(1,241,946)	225
Purchases of property and equipment	(77,741)	(43,503)	(47,328)
Proceeds from sales of property and equipment	422	293	316
Proceeds from divestiture of business	—	46,387	—
Net cash used in investing activities	(49,705)	(1,221,335)	(42,622)
FINANCING ACTIVITIES:			
Proceeds from borrowings of long-term indebtedness	171,200	1,307,000	680,000
Payments on debt	(660,000)	(117,000)	(511,250)
Net cash paid for contingent consideration	(38,196)	(4,661)	—
Proceeds from the issuance of common stock, net of issuance costs	349,590	—	—
Payment of liability component of convertible notes	—	—	(184,313)
Payment of capital lease obligation	—	—	(653)
Debt issuance costs	(5,037)	(19,043)	(4,530)
Proceeds from exercised stock options	9,392	9,774	10,481
Cash taxes paid in net equity settlement	(7,821)	(7,123)	(4,851)
Net cash provided by (used in) financing activities	(180,872)	1,168,947	(15,116)
Effect of exchange rate changes on cash and cash equivalents	(5,203)	10,724	(4,744)
Net increase (decrease) in cash and cash equivalents	(36,097)	72,880	53,923

Cash and cash equivalents at beginning of period	174,935	102,055	48,132
Cash and cash equivalents at end of period	$138,838	$174,935	$102,055

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

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

	Common Stock		Treasury Stock		Additional Paid-In Capital	Accumulated Other Comprehensive Income (Loss)	Retained Earnings	Total Equity
	Shares	Amount	Shares	Amount				
	(In thousands)							
Balance, January 1, 2016	91,714	$ 917	(17,830)	$(367,121)	$1,019,670	$ (47,902)	$145,879	$751,443
Net income	—	—	—	—	—	—	74,564	74,564
Other comprehensive loss, net of tax	—	—	—	—	—	(9,252)	—	(9,252)
Treasury shares retirement	(17,830)	(178)	17,830	367,121	(366,943)	—	—	—
Settlement of convertible notes	2,946	29	—	—	(29)	—	—	—
Exercise of convertible note hedge	—	—	(2,946)	(123,051)	123,051	—	—	—
Issuance of common stock through employee stock purchase plan	12	1	—	—	390	—	—	391
Issuance of common stock for vesting of share-based awards, net of shares withheld for taxes	824	8	—	—	5,203	—	—	5,211
Shared-based compensation	—	—	—	—	17,310	—	—	17,310
Balance, December 31, 2016	77,666	$ 777	(2,946)	$(123,051)	$798,652	$ (57,154)	$220,443	$839,667
Net income	—	—	—	—	—	—	64,743	64,743
Other comprehensive income (loss), net of tax	—	—	—	—	—	33,347	—	33,347
Issuance of common stock through employee stock purchase plan	12	—	—	—	509	—	—	509
Issuance of common stock for vesting of share-based awards, net of shares withheld for taxes	788	8	19	1,407	723	—	—	2,138
Exercise of warrants	2,840	28	—	—	(28)	—	—	—
Share-based compensation	—	—	—	—	21,902	—	—	21,902
Balance, December 31, 2017	81,306	$ 813	(2,927)	$(121,644)	$821,758	$ (23,807)	$285,186	$962,306
Adoption of Update No. 2014-09	—	—	—	—	—	—	1,854	1,854
Adoption of Update No. 2018-02	—	—	—	—	—	—	532	532
Net income	—	—	—	—	—	—	60,801	60,801
Other comprehensive income (loss), net of tax	—	—	—	—	—	(21,636)	—	(21,636)
	—	—	—	—	553	—	—	553

Issuance of common stock through employee stock purchase plan								
Issuance of common stock for vesting of share-based awards, net of shares withheld for taxes	700	4	46	1,029	52	—	—	1,085
Equity offering	6,038	60	—	—	349,529	—	—	349,589
Share-based compensation	—	3	—	—	20,709	—	—	20,712
Balance, December 31, 2018	88,044	880	(2,881)	(120,615)	1,192,601	(45,443)	348,373	1,375,796

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

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. BUSINESS

Integra LifeSciences Holdings Corporation (the “Company”) was incorporated in Delaware in 1989. The Company, a world leader in medical devices, is dedicated to limiting uncertainty for surgeons through the development, manufacturing, and marketing of cost-effective surgical implants and medical instruments. Its products are used primarily in neurosurgery, extremity reconstruction, orthopedics and general surgery.

The Company sells its products directly through various sales forces and through a variety of other distribution channels.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

BASIS OF PRESENTATION

These financial statements and the accompanying notes are prepared in accordance with accounting principles generally accepted in the United States of America and conform to Regulation S-X under the Securities Exchange Act of 1934, as amended.

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of the Company and its subsidiaries, all of which are wholly owned. All intercompany accounts and transactions are eliminated in consolidation. See Note 4, Acquisitions and Pro Forma Results, for details of new subsidiaries included in the consolidation.

USE OF ESTIMATES

The preparation of consolidated financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent liabilities, and the reported amounts of revenues and expenses. Significant estimates affecting amounts reported or disclosed in the consolidated financial statements include allowances for doubtful accounts receivable and sales returns and allowances, net realizable value of inventories, valuation of intangible assets and in-process research and development ("IPR&D"), amortization periods for acquired intangible assets, discount rates and estimated projected cash flows used to value and test impairments of long-lived assets and goodwill, estimates of projected cash flows, depreciation and amortization periods for long-lived assets, computation of taxes, valuation allowances recorded against deferred tax assets, the valuation of stock-based compensation, valuation of pension assets and liabilities, valuation of derivative instruments, and valuation of debt instruments and loss contingencies. These estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the current circumstances. Actual results could differ from these estimates.

RECLASSIFICATIONS

Certain amounts from the prior year's financial statements have been reclassified in order to conform to the current year's presentation.

CASH AND CASH EQUIVALENTS

The Company considers all short-term, highly liquid investments purchased with original maturities of three months or less to be cash equivalents. These investments are carried at cost, which approximates fair value.

TRADE ACCOUNTS RECEIVABLE AND ALLOWANCES FOR DOUBTFUL ACCOUNTS RECEIVABLE

Trade accounts receivable are recorded at the invoiced amount and do not bear interest. The Company grants credit to customers in the normal course of business, but generally does not require collateral or any other security to support its receivables.

The Company evaluates the collectability of accounts receivable based on a combination of factors. In circumstances where a specific customer is unable to meet its financial obligations to the Company, a provision to the allowances for doubtful accounts is recorded against amounts due to reduce the net recognized receivable to the amount that is reasonably expected to be collected. For all other customers, a provision to the allowances for doubtful accounts is recorded based on factors including the length of time the receivables are past due, the current business environment and the Company's historical experience. Provisions to the allowances for doubtful accounts are recorded to selling, general and administrative expenses. Account balances are charged off against the allowance when it is probable that

the receivable will not be recovered. Provision for doubtful accounts net of recoveries, associated with accounts receivable, included in selling, general and administrative expense, were $0.6 million, $2.0 million, and $0.4 million for the years ended December 31, 2018, 2017 and 2016, respectively.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

INVENTORIES

Inventories, consisting of purchased materials, direct labor and manufacturing overhead, are stated at the lower of cost, the value determined by the first-in, first-out method, or net realizable value. Inventories consisted of the following:

	December 31,	
	2018	2017
	(In thousands)	
Finished goods	$179,885	$190,100
Work in process	47,715	58,637
Raw materials	52,747	47,595
Total inventories, net	$280,347	$296,332

At each balance sheet date, the Company evaluates inventories for excess quantities, obsolescence or shelf life expiration. This evaluation includes analysis of historical sales levels by product, projections of future demand, the risk of technological or competitive obsolescence for products, general market conditions, a review of the shelf life expiration dates for products, as well as the feasibility of reworking or using excess or obsolete products or components in the production or assembly of other products that are not obsolete or for which there are not excess quantities in inventory. To the extent that management determines there are excess or obsolete inventory or quantities with a shelf life that is too near its expiration for the Company to reasonably expect that it can sell those products prior to their expiration, the Company adjusts the carrying value to estimated net realizable value.

The Company capitalizes inventory costs associated with certain products prior to regulatory approval, based on management's judgment of probable economic benefit. The Company could be required to expense previously capitalized costs related to pre-approval inventory upon a change in such judgment, due to, among other potential factors, a denial or delay of approval by necessary regulatory bodies or a decision by management to discontinue the related development program. No such amounts were capitalized at December 31, 2018 or 2017.

PROPERTY, PLANT AND EQUIPMENT

Property, plant and equipment are stated at historical cost less accumulated depreciation and any impairment charges. The Company provides for depreciation using the straight-line method over the estimated useful lives of the assets. Leasehold improvements are amortized over the lesser of the lease term or the useful life. The cost of major additions and improvements is capitalized, while maintenance and repair costs that do not improve or extend the lives of the respective assets are charged to operations as incurred. The cost of computer software developed or obtained for internal use is accounted for in accordance with the Accounting Standards Codification 350-40, Internal-Use Software.

Property, plant and equipment balances and corresponding lives were as follows:

	December 31,		
	2018	2017	Useful Lives
	(In thousands)		
Land	$1,837	$1,881	
Buildings and building improvements	20,472	20,243	5-40 years
Leasehold improvements	105,063	90,329	1-20 years
Machinery and production equipment	143,921	137,914	3-20 years
Surgical instrument kits	31,231	30,511	4-5 years
Information systems and hardware	129,962	127,946	1-7 years
Furniture, fixtures, and office equipment	17,731	17,394	1-15 years
Construction-in-progress	105,075	62,967	
Total	555,292	489,185	
Less: Accumulated depreciation	(255,180)	(219,934)	
Property, plant and equipment, net	$300,112	$269,251	

Depreciation expense associated with property, plant and equipment was $44.1 million, $36.1 million, and $31.2 million for the years ended December 31, 2018, 2017 and 2016, respectively.

CAPITALIZED INTEREST

The interest cost on capital projects, including facilities build-out and internal use software, is capitalized and included in the cost of the project. Capitalization commences with the first expenditure for the project and continues until the project is substantially complete and ready for its intended use. When no debt is incurred specifically for a project, interest is capitalized on project

expenditures using the weighted average cost of the Company's outstanding borrowings. For the years ended December 31, 2018 and 2017, respectively, the Company capitalized $2.3 million and $1.1 million of interest expense into property, plant and equipment.

ACQUISITIONS

Results of operations of acquired companies are included in the Company’s results of operations as of the respective acquisition dates. Acquired businesses are accounted for using the acquisition method of accounting, which requires that assets acquired and liabilities assumed be recorded at fair value, with limited exceptions. Any excess of the purchase price over the fair value of the net assets acquired is recorded as goodwill. Transaction costs and costs to restructure the acquired company are expensed as incurred. The operating results of the acquired business are reflected in the consolidated financial statements after the date of acquisition. Acquired in-process research and development (“IPR&D”) is recognized at fair value and initially characterized as an indefinite-lived intangible asset, irrespective of whether the acquired IPR&D has an alternative future use. Contingent consideration is recognized at the estimated fair value on the acquisition date. Subsequent changes to the fair value of contingent payments are recognized in selling, general and administrative expense in consolidated statements of operations. Contingent payments related to acquisitions consist of development, regulatory, and commercial milestone payments, in addition to sales-based payments, and are valued using discounted cash flow techniques. The fair value of development, regulatory, and commercial milestone payments reflects management’s expectations of the probability of payment and increases or decreases as the probability of payment or expectation of timing of payments changes. The fair value of sales-based payments is based upon probability-weighted future revenue estimates and increases or decreases as revenue estimates or expectation of timing of payments changes.

If the acquired net assets do not constitute a business under the acquisition method of accounting, the transaction is accounted for as an asset acquisition and no goodwill is recognized. In an asset acquisition, the amount allocated to acquired IPR&D with no alternative future use is charged to expense at the acquisition date. Payments that would be recognized as contingent consideration in a business combination are expensed when incurred in an asset acquisition.

GOODWILL AND OTHER INTANGIBLE ASSETS

The excess of the cost over the fair value of net assets of acquired businesses is recorded as goodwill. Goodwill is not subject to amortization but is reviewed for impairment at the reporting unit level annually, or more frequently if impairment indicators arise. The Company's assessment of the recoverability of goodwill is based upon a comparison of the carrying value of goodwill with its estimated fair value. The Company reviews goodwill for impairment annually as of July 31 and whenever events or changes in circumstances indicate the carrying value of goodwill may not be recoverable. Refer to Note 7, Goodwill and Other Intangibles for more information.

The Company has two reportable segments with three underlying reporting units: Instruments and Neurosurgery, under Codman Specialty Surgical and Orthopedics and Tissue Technologies. Refer to Note 16, Segment and Geographic Information for more information on reportable segments.

When the Company acquires a business, the assets acquired, including IPR&D, and liabilities assumed are recorded at their respective fair values as of the acquisition date. The Company's policy defines IPR&D as the fair value of those projects for which the related products have not received regulatory approval and have no alternative future use. Determining the fair value of intangible assets, including IPR&D, acquired as part of a business combination requires the Company to make significant estimates. These estimates include the amount and timing of projected future cash flows, the discount rate used to discount those cash flows to present value, the assessment of the asset’s life cycle, and the consideration of legal, technical, regulatory, economic, and competitive risks. The fair value assigned to other intangible assets is determined by estimating the future cash flows of each project or technology and discounting the net cash flows back to their present values. The discount rate used is determined at the time of measurement in accordance with accepted valuation methodologies.

IPR&D acquired in a business combination is capitalized as an indefinite-lived intangible asset. Development costs incurred after the acquisition are expensed as incurred. Upon receipt of regulatory approval, the indefinite-lived intangible asset is then accounted for as a finite-lived intangible asset and amortized on a straight-line basis or

accelerated basis, as appropriate, over its estimated useful life. If the research and debt project is subsequently abandoned, the indefinite-lived intangible asset is charged to expense. IPR&D acquired outside of a business combination is expensed immediately.

Due to the uncertainty associated with research and development projects, there is risk that actual results will differ materially from the original cash flow projections and that the research and development project will result in a successful commercial product. The risks associated with achieving commercialization include, but are not limited to, delay or failure to obtain regulatory approvals to conduct clinical trials, delay or failure to obtain required market clearances, delays or issues with patent issuance, or validity and litigation.

Other intangible assets include patents, trademarks, purchased technology, and supplier and customer relationships. Identifiable intangible assets are initially recorded at fair market value at the time of acquisition generally using an income or cost approach. The Company capitalizes costs incurred to renew or extend the term of recognized intangible assets and amortizes those costs over their expected useful lives.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

LONG-LIVED ASSETS

Long-lived assets held and used by the Company, including property, plant and equipment and intangible assets, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. For purposes of evaluating the recoverability of long-lived assets to be held and used, a recoverability test is performed using projected undiscounted net cash flows applicable to the long-lived assets. If an impairment exists, the amount of such impairment is calculated based on the estimated fair value of the asset. Impairments to long-lived assets to be disposed of are recorded based upon the difference between the carrying value and the fair value of the applicable assets.

INTEGRA FOUNDATION

The Company may periodically make contributions to the Integra Foundation, Inc. The Integra Foundation was incorporated in 2002 exclusively for charitable, educational, and scientific purposes and qualifies under IRC 501(c)(3) as an exempt private foundation. Under its charter, the Integra Foundation engages in activities that promote health, the diagnosis and treatment of disease, and the development of medical science through grants, contributions and other appropriate means. The Integra Foundation is a separate legal entity and is not a subsidiary of the Company; therefore, its results are not included in these consolidated financial statements. The Company contributed $0.8 million and $0.5 million to the Integra Foundation during the years ended December 31, 2018 and 2017, respectively. There were no contributions to the Integra Foundation during 2016. These contributions were recorded in selling, general, and administrative expense.

DERIVATIVES

The Company develops, manufactures, and sells medical devices globally, and its earnings and cash flows are exposed to market risk from changes in interest rates and currency exchange rates. The Company addresses these risks through a risk management program that includes the use of derivative financial instruments and operates the program pursuant to documented corporate risk management policies. All derivative financial instruments are recognized in the financial statements at fair value in accordance with the authoritative guidance. Under the guidance, for those instruments that are designated and qualify as hedging instruments, the hedging instrument must be designated as a fair value hedge, cash flow hedge, or a hedge of a net investment in a foreign operation, based on the exposure being hedged. The accounting for changes in the fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship and, further, on the type of hedging relationship. The Company's derivative instruments do not subject its earnings or cash flows to material risk, and gains and losses on these derivatives generally offset losses and gains on the item being hedged. The Company has not entered into derivative transactions for speculative purposes and from time to time, the Company may enter into derivatives that are not designated as hedging instruments in order to protect itself from currency volatility due to intercompany balances.

All derivative instruments are recognized at their fair values as either assets or liabilities on the balance sheet. The Company determines the fair value of its derivative instruments, using the framework prescribed by the authoritative guidance, by considering the estimated amount the Company would receive to sell or transfer these instruments at the reporting date and by taking into account: expected forward interest rates, currency exchange rates, the creditworthiness of the counterparty for assets, and its creditworthiness for liabilities. In certain instances, the Company utilizes a discounted cash flow model to measure fair value. Generally, the Company uses inputs that include quoted prices for similar assets or liabilities in active markets, other observable inputs for the asset or liability and inputs derived principally from, or corroborated by, observable market data by correlation or other means. The Company has classified all of its derivative assets and liabilities within Level 2 of the fair value hierarchy because observable inputs are available for substantially the full term of its derivative instruments. The Company classifies derivatives designated as hedges in the same category as the item being hedged for cash flow presentation purposes. The Company entered into a foreign currency forward contract that is not designated as a hedging instrument for accounting purposes. This contract is recorded at fair value, with the changes in fair value recognized into other income, net on the consolidated financial statements. Refer to Note 6, Derivative Instruments for more information.

FOREIGN CURRENCY

All assets and liabilities of foreign subsidiaries which have a functional currency other than the U.S. dollar are translated at the rate of exchange at year-end, while elements of the income statement are translated at the average exchange rates in effect during the year. The net effect of these translation adjustments is shown as a component of accumulated other comprehensive income (loss). These currency translation adjustments are not currently adjusted for income taxes as they relate to permanent investments in non-U.S. subsidiaries. Foreign currency transaction (loss) gain of $1.7 million, $(2.9) million and $0.3 million are reported in other income, net in the statements of operations, for the year ended December 31, 2018, 2017 and 2016, respectively.

INCOME TAXES

Income taxes are accounted for by using the asset and liability method. Deferred tax assets and liabilities are recognized for the estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. A valuation allowance is provided when it is more likely than not that some portion

or all of the deferred tax assets will not be realized. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period when the change is enacted.

The Company recognizes a tax benefit from an uncertain tax position only if it is more likely than not to be sustained upon examination based on the technical merits of the position. Reserves are established for positions that don't meet this recognition threshold. The reserve is measured as the largest amount of benefit determined on a cumulative probability basis that the Company believes is more likely than not to be realized upon ultimate settlement of the position. These reserves are classified as long-term liabilities in the consolidated balance sheets of the Company, unless the reserves are expected to be paid in cash during the next twelve months, in which case they are classified as current liabilities. The Company also records interest and penalties accrued in relation to uncertain tax benefits as a component of income tax expense.

While the Company believes it has identified all reasonably identifiable exposures and the reserve it has established for identifiable exposures is appropriate under the circumstances, it is possible that additional exposures exist and that exposures may be settled at amounts different than the amounts reserved. It is also possible that changes in facts and circumstances could cause the Company to either materially increase or reduce the carrying amount of its tax reserve.

The Company continues to indefinitely reinvest substantially all of its foreign earnings. The current provisional analysis indicates that the Company has sufficient U.S. liquidity, including borrowing capacity, to fund foreseeable U.S. cash needs without requiring the repatriation of foreign cash. The Tax Cuts and Jobs Act (the “2017 Tax Act”), enacted in December 2017, imposed a toll tax on a deemed repatriation of undistributed earnings of foreign subsidiaries. One time or unusual items that may impact the ability or intent to keep the foreign earnings and cash indefinitely reinvested include significant U.S. acquisitions, loans from a foreign subsidiary, changes in tax laws.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the 2017 Tax Act. The Company recognized the provisional tax impacts related to deemed repatriated earnings and the revaluation of deferred tax assets and liabilities and included these amounts in its consolidated financial statements for the year ended December 31, 2017. The Company applied the guidance of SAB No. 118 when accounting for the enactment date effects of the 2017 Tax Act in 2017 and throughout 2018. The Company finalized its calculations and completed its accounting for the income tax effect of the 2017 Tax Act in December 2018.

REVENUE RECOGNITION

Revenue is recognized upon the transfer of control of promised products or services to the customers in an amount that reflects the consideration the Company expects to receive in exchange for those products and services.

Total revenue, net, includes product sales, product royalties and other revenues, such as fees received from services. For products shipped with FOB shipping point terms, the control of the product passes to the customer at the time of shipment. For shipments in which the control of the product is transferred when the customer receives the product, the Company recognizes revenue upon receipt by the customer. Certain products that the Company produces for private label customers have no alternative use and the Company has a right of payment for performance to date. Revenues from those products are recognized over the period that the Company manufactures these products, which is typically one to three months. The Company uses the input method to measure the manufacturing activities completed to date, which depicts the progress of the Company's performance obligation of transferring control of goods being manufactured for private label customers.

A portion of the Company's product revenue is generated from consigned inventory maintained at hospitals and distributors, and also from inventory physically held by field sales representatives. For these types of products sales, the Company retains control until the product has been used or implanted, at which time revenue is recognized.

Revenues from sale of products and services are evidenced by either a contract with the customer or a valid purchase order and an invoice which includes all relevant terms of sale. For product sales, invoices are generally issued upon the transfer of control (or upon the completion of the manufacturing in the case of the private label transactions recognized over time) and are typically payable 30 days after the invoice date. The Company performs a review of

each specific customer's creditworthiness and ability to pay prior to acceptance as a customer. Further, the Company performs periodic reviews of its customers' creditworthiness prospectively. Refer to Note 3, Revenue From Contracts With Customers for more information.

RESEARCH AND DEVELOPMENT

Research and development costs, including salaries, depreciation, consultant and other external fees, and facility costs directly attributable to research and development activities, are expensed in the period in which they are incurred.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

EMPLOYEE TERMINATION BENEFITS AND OTHER EXIT-RELATED COSTS

The Company does not have a written severance plan, and it does not offer similar termination benefits to affected employees in all restructuring initiatives. Accordingly, in situations where minimum statutory termination benefits must be paid to the affected employees, the Company records employee severance costs associated with these restructuring activities in accordance with the authoritative guidance for non-retirement post-employment benefits. Charges associated with these activities are recorded when the payment of benefits is probable and can be reasonably estimated. In all other situations where the Company pays out termination benefits, including supplemental benefits paid in excess of statutory minimum amounts and benefits offered to affected employees based on management's discretion, the Company records these termination costs in accordance with the authoritative guidance for ASC Topic 712 Compensation-Nonretirement Benefits and ASC Topic 420 One-time Employee Termination Benefits.

The timing of the recognition of charges for employee severance costs other than minimum statutory benefits depends on whether the affected employees are required to render service beyond their legal notification period in order to receive the benefits. If affected employees are required to render service beyond their legal notification period, charges are recognized over the future service period. Otherwise, charges are recognized when management has approved a specific plan and employee communication requirements have been met.

For leased facilities and equipment that have been abandoned, the Company records estimated lease losses based on the fair value of the lease liability, as measured by the present value of future lease payments subsequent to abandonment, less the present value of any estimated sublease income on the cease-use date. For owned facilities and equipment that will be disposed of, the Company records impairment losses based on fair value less costs to sell. The Company also reviews the remaining useful life of long-lived assets following a decision to exit a facility and may accelerate depreciation or amortization of these assets, as appropriate.

AMENDMENT TO THE CERTIFICATE OF INCORPORATION AND STOCK SPLIT

On October 25, 2016, the Board of Directors recommended, subject to stockholder approval, an Amendment to the Company’s Certificate of Incorporation (the “Amendment”) to increase the number of authorized shares of common stock from 60.0 million shares to 240.0 million shares with $0.01 per share par value, for the purpose of, among other things, affecting a two-for-one stock split. The Stockholders approved the amendment on its special Stockholders Meeting on December 21, 2016 and the Company filed a certificate of amendment to the amended and restated certificate of incorporation to affect the increase in authorized share of common stock and the two-for-one-stock split. Stockholders of record, as of the close of markets on December 21, 2016, became entitled to receive one additional share of common stock for each share held. The shares were distributed on January 3, 2017. No fractional shares of common stock were issued as a result of the two-for-one stock split. The adjusted stock price was reflected on the NASDAQ stock market on January 4, 2017.

The shares of common stock retained a par value of $0.01 per share. Accordingly, the stockholders' equity reflects the stock split by reclassifying from "Additional paid-in capital" to "Common stock" in an amount equal to the par value of the increased shares resulting from the stock split. All share and per share amounts of common stock contained in the Company's financial statements have been restated for all periods to give retroactive effect to the stock split.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

STOCK-BASED COMPENSATION

The Company applies the authoritative guidance for stock-based compensation. This guidance requires companies to recognize the expense related to the fair value of their stock-based compensation awards. Stock-based compensation expense for stock option awards are based on the grant date fair value using the binomial distribution model. The Company recognizes compensation expense for stock option awards, restricted stock awards, performance stock awards and contract stock awards over the requisite service period of the award. All excess tax benefits and taxes and tax deficiencies from stock-based compensation are included in provision for income taxes in the consolidated statement of operations. Refer to Note 9, Stock-based Compensation for more information.

PENSION BENEFITS

The Company maintains defined benefit pension plans that cover certain employees in Austria, France, Japan, Germany and Switzerland. Various factors are considered in determining the pension liability, including the number of employees expected to be paid their salary levels and years of service, the expected return on plan assets, the discount rate used to determine the benefit obligations, the timing of benefit payments and other actuarial assumptions.

Retirement benefit plan assumptions are reassessed on an annual basis or more frequently if changes in circumstances indicate a re-evaluation of assumptions are required. The key benefit plan assumptions are the discount rate and expected rate of return on plan assets. The discount rate is based on average rates on bonds that matched the expected cash outflows of the benefit plans. The expected rate of return is based on historical and expected returns on the various categories of plan assets.

Total contributions to the defined benefit plans were $1.7 million and $0.5 million during the years ended December 31, 2018 and 2017. There were no contributions to the defined benefit plans for the year ended December 31, 2016.

The Company uses the corridor approach in measuring the amount of net periodic benefit pension cost to recognize each period. The corridor approach defers all actuarial gains and losses resulting from variances between actual results and actuarial assumptions. Those unrecognized gains and losses are amortized when the net gains and losses exceed 10% of the greater of the market-related value of plan assets or the projected benefit obligation at the beginning of the year. The amount in excess of the corridor is amortized over the average remaining service period to retirement date of active plan participants.

CONCENTRATION OF CREDIT RISK

Financial instruments, which potentially subject the Company to concentrations of credit risk, consist principally of cash and cash equivalents, which are held at major financial institutions, investment-grade marketable debt securities and trade receivables.

The Company's products are sold on an uncollateralized basis and on credit terms based upon a credit risk assessment of each customer. A portion of the Company's trade receivables to customers outside the United States includes sales to foreign distributors, who then sell to government owned or supported healthcare systems.

None of the Company's customers accounted for 10% or more of the consolidated net sales during the years ended December 31, 2018, 2017 and 2016.

NEW ACCOUNTING PRINCIPLES ADOPTED

In May 2014, the FASB issued Update No. 2014-09, Revenue from Contracts with Customers (Topic 606). The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. To achieve that core principle, an entity should 1) identify the contract(s) with a customer, 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. This update became effective for all annual periods and interim reporting periods beginning after December 15, 2017. The Company adopted Topic 606 as of January 1, 2018 using the modified retrospective method. The Company applies the practical expedient as defined in Topic 606 to recognize the incremental costs of obtaining contracts as an expense when incurred if the amortization period of the assets that the

Company otherwise would have recognized is one year or less. These costs which are included in selling, general, and administrative expenses are consistent with the accounting prior to the adoption of Topic 606. The Company also elected to use the practical expedient to not adjust the promised amount of consideration for the effects of the time value of money for contracts in which the anticipated period between when the Company transfers the goods or services to the customer and when the customer pays is equal to one year or less. See Note 3, Revenues from Contracts with Customers, for further information.

In August 2016, the FASB issued Update No. 2016-15, Classification of Certain Cash Receipts and Cash Payments. The guidance addresses the classification of cash flows related to debt repayment or extinguishment costs, settlement of zero-coupon debt instruments or debt instruments with coupon rates that are insignificant in relation to the effective interest rate of the borrowing, contingent consideration payments made after business combinations, proceeds from the settlement of insurance claims and corporate-owned life insurance, distributions received from equity method investees and beneficial interests in securitization transaction. This update became effective for all annual periods and interim reporting periods beginning after

December 15, 2017. The Company adopted ASU 2016-15 effective January 1, 2018 on a retrospective basis. The adoption of this guidance had no significant impact on the Company's consolidated financial statements.

In October 2016, the FASB issued Update No. 2016-16, Intra-Entity Transfers of Assets Other Than Inventory. The guidance requires that the income tax consequences of intra-entity transfers of assets other than inventory be recognized as a current-period income tax expense or benefit and removes the requirement to defer and amortize the consolidated tax consequences of intra-entity transfers. The new standard became effective for all annual periods beginning after December 15, 2017. The Company adopted ASU 2016-16 effective January 1, 2018. The adoption of this guidance had no significant impact on the Company's consolidated financial statements.

In March 2017, the FASB issued Update No. 2017-07, Compensation - Retirement Benefits (Topic 715): Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. The guidance requires that an employer report the service cost component in the same line item or items as other compensation costs arising from services rendered by the pertinent employees during the period. The other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations if one is presented. If a separate line item or items were to be used to present the other components of net benefit cost, that line item or items must be appropriately described. If a separate line item or items is/are not used, the line item or items used in the income statement to present the other components of net benefit cost must be disclosed. In addition, the amendments also allow only the service cost component to be eligible for capitalization when applicable. The new standard became effective for annual periods beginning after December 15, 2017. The Company adopted ASU 2017-07 effective January 1, 2018. The Company recognized the components of net periodic benefit cost other than the service cost component in other (expense) income, net in the consolidated statements of operations. The adoption of this guidance had no significant impact on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, Stock Compensation (Topic 718): Scope of Modification Accounting. The update serves to provide clarity and reduce both (1) diversity in practice and (2) cost and complexity when applying the guidance in Topic 718, Compensation-Stock Compensation, to a change to the terms or conditions of a share-based payment award. The new standard became effective for all annual periods beginning after December 15, 2017. The Company adopted ASU 2017-09 effective January 1, 2018. The adoption of this guidance had no significant impact on the Company's consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. This update amends the hedge accounting rules to simplify the application of hedge accounting guidance and better portray the economic results of risk management activities in the financial statements. The guidance expands the ability to hedge non-financial and financial risk components, reduces complexity in fair value hedges of interest rate risk, eliminates the requirement to separately measure and report hedge ineffectiveness, as well as eases certain hedge effectiveness assessment requirements. This update will become effective for all annual periods and interim reporting periods beginning after December 15, 2018. Early adoption is permitted. The Company elected to early adopt ASU 2017-12 effective January 1, 2017 using the modified retrospective method. The adoption of this guidance had no significant impact on the Company's consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, Reclassification of Certain Tax Effects From Accumulated Other Comprehensive Income. This amendment allows a reclassification from accumulated other comprehensive income to retained earnings for stranded tax effects resulting from the 2017 Tax Act (as defined in Note 12, Income Taxes). This guidance is effective for annual and interim periods beginning after December 15, 2018. Early adoption is permitted. The Company elected to early adopt the ASU 2018-02 effective January 1, 2018, which resulted in the reclassification of $0.5 million from accumulated other comprehensive loss to retained earnings related to a net unrealized loss on cash flow hedges.

NEW ACCOUNTING PRINCIPLES NOT YET ADOPTED

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). Under current accounting guidance, an entity is not required to report operating leases on the balance sheet. The amendment requires that lessees recognize virtually all of its leases on the balance sheet by recording a right-of-use asset and lease liability (other than leases that meet the definition of a "short-term lease"). This update will become effective for all annual periods and interim reporting periods beginning after December 15, 2018. The Company will adopt this standard on January 1, 2019 using the modified retrospective method. The Company is currently finalizing the changes to its processes, systems and controls which are necessary to support recognition and disclosure under the new lease standard. The estimated impact of recording a right-of-use asset and lease liability for operating leases will increase total assets and total liabilities 2% and 4% respectively, when considering the balances of total assets and total liabilities as of December 31, 2018. During 2018, the Company entered into a lease for a new corporate headquarters in Princeton, NJ which will commence during the second quarter of 2019. The estimated impact above excludes the impact of this lease. The Company will make cumulative total payments of approximately $67.0 million over the term of the lease.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

In July 2018, the FASB issued ASU Number 2018-11, Leases (Topic 842): Targeted Improvements. This update provides entities with an additional and optional transition method to adopt ASU Number 2016-02 with a cumulative-effect adjustment in the period of adoption. This update also provides guidance for a practical expedient that permits lessors to not separate non-lease components from the associated lease components. Additionally, in July 2018, the FASB issued ASU Number 2018-10, Codification Improvements to Topic 842, Leases. This update provides additional guidance on the new lease model with improvements in numerous aspects of the guidance in ASC 842 including, but not limited to, implicit rates, reassessment of lease classification, terms and purchase options, investment tax credits, and various other transition guidance. The Company will adopt this ASU concurrently with ASU Number 2016-02.

In August 2018, the FASB issued ASU 2018-14, Compensation-Retirement Benefits-Defined Benefit Plans-General (Subtopic 715-20). The new guidance modifies the disclosure requirements for employers that sponsor defined benefit pension or other postretirement plans, including removing certain previous disclosure requirements, adding certain new disclosure requirements, and clarifying certain other disclosure requirements. The ASU will be effective for fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. Early adoption is permitted. The Company plans to early adopt ASU 2018-14 on January 1, 2019. The adoption of this ASU is not expected to have a material impact on the consolidated financial statements.

In October 2018, the FASB issued ASU 2018-16, Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as Benchmark Interest Rate for Hedge Accounting Purposes. This ASU permits use of the OIS rate based on the SOFR as a U.S. benchmark interest rate for hedge accounting purposes. This ASU is effective for fiscal years beginning after December 15, 2018 (fiscal 2020), and interim periods within those fiscal years, with early adoption permitted. The new guidance must be applied on a prospective basis. The Company plans to early adopt ASU 2018-16 on January 1, 2019. The adoption of this ASU is not expected to have a material impact on the consolidated financial statements.

There are no other recently issued accounting pronouncements that are expected to have a material effect on the Company's financial position, results of operations or cash flows.

SUPPLEMENTAL CASH FLOW INFORMATION

Cash paid for interest during the years ended December 31, 2018, 2017 and 2016 was $58.3 million (net of $2.3 million that was capitalized into construction in progress), $32.3 million (net of $1.1 million that was capitalized into construction in progress) and $57.2 million (net of $1.0 million that was capitalized into construction in progress), respectively. Cash paid for interest during the year ended December 31, 2016 includes a $42.8 million payment of accreted interest associated with convertible notes issued in 2016.

In December 2016, the Company settled convertible notes issued in 2011 and issued 2.9 million shares of common stock with a fair value of $122.0 million. The Company also received 2.9 million shares of common stock from the exercise of call options with hedge participants with fair value of $123.1 million at the date of the exercise which was held as treasury stock as of December 31, 2016.

For the year ended December 31, 2017, the Company issued 2.8 million shares of common stock due to the exercise of 8.7 million warrants associated with convertible notes issued in 2011.

Cash paid for income taxes, net of refunds, for the years ended December 31, 2018, 2017 and 2016 was $10.4 million, $14.6 million and $4.3 million, respectively.

Property and equipment purchases included in liabilities at December 31, 2018, 2017 and 2016 were $5.4 million, $7.8 million and $4.7 million, respectively.

3. REVENUES FROM CONTRACTS WITH CUSTOMERS

Summary of Accounting Policies on Revenue Recognition

Revenue is recognized upon the transfer of control of promised products or services to the customers in an amount that reflects the consideration the Company expects to receive in exchange for those products and services.

Total revenue, net, includes product sales, product royalties and other revenues, such as fees received from services.

For products shipped with FOB shipping point terms, the control of the product passes to the customer at the time of shipment. For shipments in which the control of the product is transferred when the customer receives the product, the Company recognizes revenue upon receipt by the customer. Certain products that the Company produces for private label customers have no alternative use and the Company has a right of payment for performance to date. Revenues from those products are recognized over the period that the Company manufactures these products, which is approximately one to three months. The Company uses the input method to measure the manufacturing activities completed to date, which depicts the progress of the Company's performance obligation of transferring control of goods being manufactured for private label customers.

A portion of the Company's product revenue is generated from consigned inventory maintained at hospitals and distributors, and also from inventory physically held by field sales representatives. For these types of products sales, the Company retains control until the product has been used or implanted, at which time revenue is recognized. Revenues from sale of products and services are evidenced by either a contract with the customer or a valid purchase order and an invoice which includes all relevant terms of sale. For product sales, invoices are generally issued upon the transfer of control (or upon the completion of the manufacturing in the case of the private label transactions recognized over time) and are typically payable 30 days after the invoice date. The Company performs a review of each specific customer's creditworthiness and ability to pay prior to acceptance as a customer. Further, the Company performs periodic reviews of its customers' creditworthiness prospectively.

Performance Obligations

The Company's performance obligations consist mainly of transferring control of goods and services identified in the contracts, purchase orders, or invoices. The Company has no significant multi-element contracts with customers.

Significant Judgments

Usage-based royalties and licenses are estimated based on the provisions of contracts with customers and recognized in the same period that the royalty-based products are sold by the Company's strategic partners. The Company estimates and recognizes royalty revenue based upon communication with licensees, historical information, and expected sales trends. Differences between actual reported licensee sales and those that were estimated are adjusted in the period in which they become known, which is typically the following quarter. Historically, such adjustments have not been significant.

The Company estimates returns, price concessions, and discount allowances using the expected value method based on historical trends and other known factors. Rebate allowances are estimated using the most likely method based on each customer contract.

The Company's return policy, as set forth in its product catalogs and sales invoices, requires the Company to review and authorize the return of a product in advance. Upon the authorization, a credit will be issued for the goods returned within a set amount of days from the shipment, which is generally ninety days.

The Company disregards the effects of a financing component if the Company expects, at contract inception, that the period between the transfer and customer payment for the good or services will be one year or less. The Company has no significant revenues recognized on payments expected to be received more than one year after the transfer of control of products or services to customers.

Contract Asset and Liability

Revenues recognized from the Company's private label business that are not invoiced to the customers as a result of recognizing revenue over time are recorded as a contract asset included in the prepaid expenses and other current assets account in the consolidated balance sheet.

Other operating revenues may include fees received under service agreements. Non-refundable fees received under multiple-period service agreements are recognized as revenue as the Company satisfies the performance obligations to the other party. A portion of the transaction price allocated to the performance obligations to be satisfied in the future periods is recognized as contract liability.

The following table summarized the changes in the contract asset and liability balances for the year ended December 31, 2018:

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

	Total (amounts in thousands)
Contract Asset	
Contract asset, January 1, 2018	$ 3,552
Transferred to trade receivable of contract asset included in beginning of the year contract asset	(3,552)
Contract asset, net of transferred to trade receivables on contracts during the period	4,193
Contract asset, December 31, 2018	$ 4,193
Contract Liability	
Contract liability, January 1, 2018	$ 11,059
Recognition of revenue included in beginning of year contract liability	(3,081)
Contract liability, net of revenue recognized on contracts during the period	4,780
Foreign currency translation	(42)
Contract liability, December 31, 2018	$ 12,716

At December 31, 2018, the short-term portion of the contract liability of $3.8 million and the long-term portion of $8.9 million were included in accrued expenses and other current liabilities and other liabilities in the consolidated balance sheet.

As of December 31, 2018, the Company is expected to recognize revenue of approximately $3.8 million in 2019, $2.8 million in 2020, $1.9 million in 2021, $1.2 million in 2022, $0.8 million in 2023, and $2.2 million thereafter.

Shipping and Handling Fees

The Company elected to account for shipping and handling activities as a fulfillment cost rather than a separate performance obligation. Amounts billed to customers for shipping and handling are included as part of the transaction price and recognized as revenue when control of underlying products is transferred to the customer. The related shipping and freight charges incurred by the Company are included in the cost of goods sold.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Product Warranties

Certain of the Company's medical devices, including monitoring systems and neurosurgical systems, are designed to operate over long periods of time. These products are sold with warranties which may extend for up to two years from the date of purchase. The warranties are not considered a separate performance obligation. The Company estimates its product warranties using the expected value method based on historical trends and other known factors. The Company includes them in accrued expenses and other current liabilities in the consolidated balance sheet.

Taxes Collected from Customers

The Company elected to exclude from the measurement of the transaction price all taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction and collected by the entity from a customer.

Disaggregated Revenue

The following table presents revenues disaggregated by the major sources of revenues for the years-ended December 31, 2018 and 2017 (amounts in thousands):

	Year Ended December 31, 2018	Year Ended December 31, 2017	Year Ended December 31, 2016
	(amounts in thousands)		
Neurosurgery	684,148	446,994	367,985
Precision Tools and Instruments	279,781	$273,307	$264,539
Total Codman Specialty Surgical	963,929	720,301	632,524
Wound Reconstruction	305,465	269,068	178,524
Extremity Orthopedics	96,688	98,876	97,067
Private Label	106,359	99,991	83,960
Total Orthopedics and Tissue Technologies	508,512	467,935	359,551
Total revenue	$1,472,441	$1,188,236	$992,075

See Note 16, Segment and Geographical Information, for details of revenues based on the location of the customer.

Effect of Adoption of ASC Topic 606

On January 1, 2018, the Company adopted Topic 606 using the modified retrospective method. Results of operations for the reporting periods after January 1, 2018 are presented under Topic 606, while prior period amounts are not adjusted and continue to be reported in accordance with Topic 605, Revenue Recognition.

The adoption of Topic 606 resulted in an increase to the opening retained earnings of $1.9 million, which was recorded net of taxes as of January 1, 2018 to reflect the change in timing of the recognition of revenue related to the Company's private label business from point in time to over time during the manufacturing process and goods in transit for which control was transferred to customers at the time of shipment. Total assets and liabilities increased by $7.1 million and $5.2 million, respectively, as of January 1, 2018.

The impact of adoption of Topic 606 to the Company's consolidated statement of operations for the year ended December 31, 2018 was as follows:

	Year Ended December 31, 2018	
	As Reported	Excluding Impact of Topic 606
	(Amounts in thousands)	
Statement of Operations		

Total revenue, net	$1,472,441	$1,468,075
Cost of goods sold	571,496	570,028
Income tax benefit	(3,398)	(4,119)
Net income	60,801	58,624

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The adoption of Topic 606 had no significant impact on the Company's consolidated balance sheet as of December 31, 2018.

4. ACQUISITIONS AND PRO FORMA RESULTS

Johnson & Johnson's Codman Neurosurgery Business

On February 14, 2017, the Company entered into a binding offer letter (the “Offer Letter”) with DePuy Synthes, Inc., a Delaware corporation (“DePuy Synthes”), a wholly-owned subsidiary of Johnson & Johnson, pursuant to which Integra made a binding offer to acquire certain assets, and assume certain liabilities, of Johnson & Johnson’s Codman neurosurgery business (the “Codman Acquisition”). The assets and liabilities subject to the proposed Codman Acquisition relate to the research, development, manufacturing, marketing, distribution and sale of certain products used in connection with neurosurgery procedures. The purchase price for the Codman Acquisition was $1.014 billion. The Codman Acquisition was accounted for using the acquisition method of business combination under ASC 805, Business Combinations. This method requires that assets acquired and liabilities assumed in a business combination be recognized at their fair values as of the acquisition date. During the third quarter of 2018, the Company completed the purchase accounting for the Codman Acquisition.

In connection with the closing of the Codman Acquisition, the Company and DePuy Synthes entered into certain additional ancillary agreements, including transition services agreements, a transition manufacturing services agreement and certain other customary agreements. Amounts accrued and due to DePuy Synthes as of December 31, 2018 and 2017 were $22.8 million and $25.4 million, respectively.

The Company recorded revenue for Codman Neurosurgery of approximately $312.5 million and $76.9 million, in the consolidated statements of operations and comprehensive income for the years ended December 31, 2018 and 2017, respectively. The net income or loss attributable to this acquisition cannot be identified on a stand-alone basis because it is in the process of being integrated into the Company's operations.

The following table summarizes the final fair values of the assets acquired and liabilities assumed at the acquisition date and reflects measurement period adjustments subsequent to the acquisition date:

	Final Valuation (Dollars in thousands)	Weighted Average Life
Inventory	74,962	
Assets held for sale	30,813	
Other current assets	8,202	
Property, plant and equipment	41,339	
Intangible assets:		
Codman corporate trade name	162,900	Indefinite
Completed technology	375,200	22 years
Goodwill	342,322	
Total assets acquired	1,035,738	
Accrued expenses	1,730	
Pension liabilities	19,917	
Net assets acquired	$1,014,091	

During 2018, the Company received cash of $26.7 million from DePuy Synthes related to working capital adjustments, which was recorded within investing activities on the consolidated statements of cash flows.

The Company recorded measurement period adjustments to goodwill totaling $4.0 million. During the first half of 2018, the Company adjusted goodwill by $3.2 million because of working capital adjustments of $6.2 million that were offset by inventory adjustments of $3.0 million. During the third quarter 2018, the Company adjusted goodwill by $0.8 million after finalizing the valuation step up of property, plant and equipment of $5.5 million. The adjustment for property, plant and equipment was offset by completed technology intangible asset adjustments of $4.7 million.

During the first three quarters of 2018, the Company paid $15.9 million for inventory that was included in the initial purchase accounting. The payment was included within financing activities on the consolidated statements of cash flows.

The Company recorded $17.3 million in cost of goods sold related to fair value inventory purchase accounting adjustments for the year ended December 31, 2018.

Goodwill was allocated to the Codman Specialty Surgical segment. Goodwill is the excess of the consideration transferred over the net assets recognized and represents the expected revenue and cost synergies of the combined company and assembled workforce. Goodwill recognized as a result of the acquisition is generally deductible for income tax purposes.

In the fourth quarter of 2017, the Company wrote-off construction in progress of $6.3 million related to a project acquired from Codman Neurosurgery that the Company decided to discontinue after the Codman Acquisition.

Divestiture to Natus

On September 8, 2017, to facilitate the acquisition of the Codman Neurosurgery Business, the Company and certain of its subsidiaries entered into an asset purchase agreement (the “Divestiture Agreement”) with Natus Medical Incorporated (“Natus”), pursuant to which the Company agreed to divest its Camino® Intracranial Pressure monitoring and the U.S. rights to its fixed pressure shunts businesses within its Codman Specialty Surgical segment together with certain neurosurgery assets acquired as part of the Codman Acquisition, which includes Codman U.S. dural graft implant, external ventricular drainage catheter and cerebrospinal fluid collection systems businesses (the “Divestiture”). The Divestiture Agreement was entered into in connection with the review of the Codman Acquisition by the Federal Trade Commission and the antitrust authority of Spain.

On October 6, 2017, upon the terms and subject to the conditions of the Divestiture Agreement, the Divestiture was completed and Natus paid an aggregate purchase price of $46.4 million.

Assets and liabilities divested consisted of the following as of October 6, 2017 (amounts in thousands):

Inventories	$8,348
Prepaid expenses and other current assets	36
Assets held for sale	30,813
Property, plant and equipment, net	1,122
Goodwill	2,861
Total assets divested	$43,180
Deferred revenue	$1,082
Accrued compensation	209
Total liabilities divested	$1,291

Assets held for sale includes assets and liabilities related to U.S. dural graft implant, external ventricular drainage catheters and cerebrospinal fluid collection systems businesses acquired as part of acquisition of Codman Neurosurgery.

The transitional supply agreement with Natus requires the Company to provide to Natus certain assets defined in the transitional supply agreement upon termination. The Company recognized a liability of $1.3 million, included in other liabilities in consolidated balance sheet, related to estimated cost of assets to be provided to Natus upon termination of transitional supply agreement.

The Divestiture does not represent a strategic shift that will have a major effect on the Company's operations and financial statements. Goodwill was allocated to the assets and liabilities divested using the relative fair value method. The Company recognized a gain on sale of business of $2.6 million included in other income, net in its consolidated statement of operations for the year ended December 31, 2017.

Derma Sciences

On February 24, 2017, the Company executed the Agreement and Plan of Merger (the "Merger Agreement") under which the Company acquired all of the outstanding shares of Derma Sciences, Inc., a Delaware corporation ("Derma Sciences") for an aggregate purchase price of approximately $210.8 million, including payment of certain of Derma Sciences' closing expenses and settlement of stock-based compensation plans of $4.8 million and $4.3 million, respectively. The purchase price consisted of a cash payment to the former shareholders of Derma Sciences of

approximately $201.7 million upon the closing of the transaction.

Derma Sciences is a tissue regeneration company focused on advanced wound and burn care that offers products to help manage chronic and hard-to-heal wounds, especially those resulting from diabetes and poor vascular functioning. The revenue and net income or loss attributable to this acquisition cannot be identified on a stand-alone basis because it has been integrated into the Company's operations.

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The Derma Sciences acquisition was accounted for using the acquisition method of business combination under ASC 805, Business Combinations. This method requires that assets acquired and liabilities assumed in a business combination be recognized at their fair values as of the acquisition date.

The following table summarizes the final fair values of the assets acquired and liabilities assumed at the acquisition date and reflects purchase accounting adjustments subsequent to the acquisition date:

	Final Valuation (Dollars in thousands)	Weighted Average Life
Cash and cash equivalents	$ 16,512	
Short-term investments	19,238	
Accounts receivable	8,949	
Inventory	17,977	
Prepaid expenses and other current assets	4,369	
Property, plant and equipment	4,311	
Intangible assets:		
Customer relationship	78,300	14 years
Trademarks/brand names	13,500	15 years
Completed technology	11,600	14 years
Non-compete agreement	280	1 year
Goodwill	73,765	
Deferred tax assets	14,524	
Other assets	101	
Total assets acquired	263,426	
Accounts payable	4,560	
Accrued expenses and other current liabilities	7,409	
Contingent liability	37,174	
Other liabilities	3,805	
Net assets acquired	$ 210,478	

Goodwill related to the Derma Sciences acquisition was allocated to the Orthopedics and Tissue Technologies segment. Goodwill is the excess of the consideration transferred over the net assets recognized and represents the expected revenue and cost synergies of the combined company and assembled workforce. Goodwill recognized as a result of this acquisition is not deductible for income tax purposes. During the first quarter of 2018, the Company completed its purchase accounting of Derma Sciences.

Short-term Investments

Short-term investments recognized at the acquisition date of Derma Sciences are investments in equity and debt securities including certificates of deposit purchased with an original maturity greater than three months which are deposited in various U.S. financial institutions and are fully insured by the Federal Deposit Insurance Corporation. The Company considers securities with original maturities of greater than 90 days to be available for sale securities. Securities under this classification are recorded at fair value and unrealized gains and losses are recorded within accumulated other comprehensive income. The estimated fair value of the available for sale securities is determined based on quoted market prices. The Company evaluates securities with unrealized losses to determine whether such losses, if any, are other than temporary. Short-term investments are classified as Level 1 in fair value hierarchy. Fair values of short-term investments are determined using the unadjusted quoted prices in active markets for identical assets or liabilities that the Company has the ability to access at the balance sheet date.

In the second quarter of 2017, the Company sold the acquired short-term investments and recognized a realized loss of $2.3 million included in other income, net in the consolidated statement of operations.

Deferred Taxes

The acquired deferred taxes of $14.5 million include a deferred tax asset of $39.7 million related to a federal net operating loss which the Company expects to utilize against income in future periods and a deferred tax asset of $16.4 million related to intangibles acquired by Derma Sciences in previous periods, offset by a deferred tax liability of $41.1 million for new intangibles for which

the Company will not receive a tax benefit and deferred tax liability $0.5 million related to various deferred items. In the second quarter of 2017, the Company decreased the preliminary estimated value of the net deferred tax assets by $1.5 million to reflect adjustments to preliminary estimated fair values of assets and liabilities acquired. In fourth quarter of 2017, the Company decreased the preliminary value of the deferred tax asset by $3.3 million to reflect returns filed for periods prior to the acquisition date and adjustments for expected effective state tax rates.

United States Food and Drug Administration ("FDA") Untitled Letter

On June 22, 2015, the FDA issued an Untitled Letter (the "Untitled Letter") alleging that BioD morselized amniotic membrane based products do not meet the criteria for regulation as human cellular tissue-based products (“HCT/Ps”) solely under Section 361 of the Public Health Service Act and that, as a result, BioD would need a biologics license to lawfully market those morselized products. Since the issuance of the Untitled Letter, BioD and more recently, the Company have been in discussion with the FDA to communicate its disagreement with the FDA’s assertion that certain products are more than minimally manipulated. The FDA has not changed its position that certain of the BioD acquired products are not eligible for marketing solely under Section 361.

In November 2017, the FDA issued the final guidance document related to human tissue titled, “Regulatory Considerations for Human Cells, Tissues, and Cellular and Tissue-Based Products: Minimal Manipulation and Homologous Use” (the “HCT/P Final Guidance”). The HCT/P Final Guidance maintains the FDA’s position that products such as the Company’s morselized amniotic membrane tissue-based products do not meet the criteria for regulation solely as HCT/Ps. In addition, the FDA articulated a risk-based approach to enforcement and, while some uses for amniotic membrane tissue-based products would enjoy as much as thirty-six months of enforcement discretion, other high risk uses could be subject to immediate enforcement action. The Company does not believe the uses for its amniotic membrane tissue-based products fall into the high-risk category. As of February 26, 2019, the Company has not received any further notice of enforcement action from the FDA regarding its morselized amniotic tissue-based products. Nonetheless, the Company can make no assurances that the FDA will continue to exercise its enforcement discretion with respect to the Company’s amniotic membrane tissue-based products, and any potential action of the FDA could have a financial impact regarding the sales of such products. The Company has been evaluating and is considering regulatory approval pathways for its morselized amniotic membrane tissue-based products.

Revenues from BioD morselized amniotic material-based products for the year ended December 31, 2018 were less than 1.0% of consolidated revenues.

Contingent Consideration

The Company assumed contingent consideration incurred by Derma Sciences related to its acquisitions of BioD and the intellectual property related to the Medihoney product. The Company accounted for the contingent liabilities by recording their fair value on the date of the acquisition based on a discounted cash-flow model. The contingent liabilities recognized as part of the Derma Sciences acquisition relate to the following:

i. contractual incentive payments that could be made to former equity owners of BioD if net sales of BioD products exceed a certain amount for the twelve-month periods ending June 30, 2017 and 2018 ("BioD Earnout Payments");

ii. a contractual incentive payment that could be made to the former equity owners if there has been no specific enforcement action or notice by the FDA against the specific BioD products as a result of the Untitled Letter for a certain period after closing as defined by the agreement ("Product Payment"); and

iii. contractual incentive payments that could be made to the former owner of the intellectual property relating to the Medihoney product line, if net sales of Medihoney products exceed certain amounts defined in the agreement between Derma Sciences and the former owner of the intellectual property of Medihoney for any twelve-month period ("Medihoney Earnout Payments").

At the date of the acquisition, net sales used in estimating the BioD Earnout Payments is based on the weighted average of different possible scenarios using revenue volatility of 13.5% . The BioD Earnout Payments were valued using a discount rate of 3.0%. The maximum payout related to the BioD Earnout Payments is $26.5 million. The estimated fair value as of February 24, 2017 was $9.1 million. In August 2017, the Company paid $4.8 million for the twelve-month period ending June 30, 2017 component of the BioD Earnout Payments. The Company made no

additional payments after the final earn out period ended on June 30, 2018. As of December 31, 2017, the estimated fair value of the remaining portion of the BioD Earnout Payments was $0.3 million.

At the date of acquisition, the Company estimated that the probability of the Product Payment was 98.0% and valued it at a discount rate of 2.5%. The maximum payout related to the Product Payment is $29.7 million. The estimated fair value as of February 24, 2017 was $26.8 million. In the second quarter of 2017, the Company adjusted the preliminary estimated fair value to increase the Product Payment by $0.9 million related to additional products that should have been included in the preliminary estimate based on the Merger Agreement. On May 25, 2017, the Company made full payment for the Product Payment of $26.6 million. The

payment was included in cash used in business acquisition, net of cash acquired within investing activities in the condensed consolidated statements of cash flows since the payment was made shortly after the acquisition.

At the date of the acquisition, net sales used in estimating the Medihoney Earnout Payments was based on the weighted average of different possible scenarios using revenue volatility of 27.5%. The Medihoney Earnout Payments were valued using a discount rate of 4.5%. The maximum payout related to the Medihoney Earnout Payments is $5.0 million. During the second quarter of 2018, the Company paid $2.0 million for the Medihoney Earnout Payment. The estimated fair value as of December 31, 2018 was $0.2 million. The estimated fair value as of February 24, 2017 and December 31, 2017 was $1.4 million.

These fair value measurements were based on significant inputs not observed in the market and thus represented a Level 3 measurement. Contingent consideration is re-measured to fair value at each reporting date until the contingency is resolved, and those changes in fair value are recognized in earnings. Depending on the expected timing of the estimated payments, the acquisition date fair values and subsequent remeasurement could be different.

Pro Forma Results (unaudited)

The following unaudited pro forma financial information summarizes the results of operations for the years ended December 31, 2017 and 2016 as if the acquisitions of Codman Neurosurgery, Derma Sciences and divestiture to Natus, which were completed by the Company during 2017 had been completed as of the beginning 2016. The pro forma results are based upon certain assumptions and estimates, and they give effect to actual operating results prior to the acquisitions and adjustments to reflect (i) the change in interest expense, depreciation expense, intangible asset amortization and fair value inventory step-up, (ii) timing of recognition for certain expenses that will not be recurring in the post-acquisition period, which includes $2.9 million incurred by Derma Sciences prior to acquisition and $24.9 million incurred by Integra, (iii) gain from the sale of business of $2.6 million related to the Divestiture to Natus, and (iv) income taxes at a rate consistent with the Company’s statutory rate at the date of the acquisitions. No effect has been given to other cost reductions or operating synergies. As a result, these pro forma results do not necessarily represent results that would have occurred if the acquisitions had taken place on the basis assumed above, nor are they indicative of the results of future combined operations.

	Year Ended December 31,	
	2017	2016
	(Pro forma)	
	(In thousands except per share amounts)	
Total revenue from continuing operations	$ 1,428,491	$ 1,446,903
Net income from continuing operations	$ 81,730	$ 27,520
Basic earnings per share from continuing operations	$ 1.06	$ 0.37

Consortium of Focused Orthopedists

On January 8, 2019, the Company announced that it had signed a license and development agreement with Consortium of Focused Orthopedists, LLC, for a short stem and stemless shoulder system. The Company is assessing the economics of the transaction and expects to complete the accounting for the transaction during the first quarter of 2019.

5. DEBT

Amended and Restated Senior Credit Agreement

On May 3, 2018, the Company entered into the fifth amendment and restatement (the "May 2018 Amendment") of its Senior Credit Facility (the "Senior Credit Facility") with a syndicate of lending banks with Bank of America, N.A., as Administrative Agent. The May 2018 Amendment extended the maturity date to May 3, 2023 and decreased the applicable rate, as described below. The Company continues to have the aggregate principal amount of $2.2 billion available to it through the following facilities:

i. a $900.0 million Term Loan facility; and

ii.

a $1.3 billion revolving credit facility, which includes a $60.0 million sublimit for the issuance of standby letters of credit and a $60.0 million sublimit for swingline loans.

In connection with the May 2018 Amendment, the Company's maximum consolidated total leverage ratio in the financial covenants (as defined in the Senior Credit Facility) was modified to the following:

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Fiscal Quarter	Maximum Consolidated Total Leverage Ratio
Execution of May 2018 Amendment through March 31, 2019	5.50 : 1.00
June 30, 2019 through March 31, 2020	5.00 : 1.00
June 30, 2020 through March 31, 2021	4.50 : 1.00
June 30, 2021 and thereafter	4.00 : 1.00

Borrowings under the Senior Credit Facility bear interest, at the Company's option, at a rate equal to the following:

i. the Eurodollar Rate (as defined in the amendment and restatement) in effect from time to time plus the applicable rate (ranging from 1.00% to 1.75%), or

ii. the highest of:

1. the weighted average overnight Federal funds rate, as published by the Federal Reserve Bank of New York, plus 0.50%, or plus the applicable rate (ranging from 0% to 0.75%),
2. the prime lending rate of Bank of America, N.A. plus the applicable rate (ranging from 0% to 0.75%), and
3. the one-month Eurodollar Rate plus 1.00% plus the applicable rate (ranging from 0% to 0.75%).

The applicable rates are based on the Company’s consolidated total leverage ratio (defined as the ratio of (a) consolidated funded indebtedness less cash that is not subject to any restriction on the use or investment thereof to (b) consolidated EBITDA at the time of the applicable borrowing).

The Company will also pay an annual commitment fee (ranging from 0.15% to 0.35%), based on the Company’s consolidated total leverage ratio, on the amount available for borrowing under the revolving credit facility.

At December 31, 2018 and 2017, there was $345.0 million and $655.0 million outstanding, respectively, under the revolving portion of the Senior Credit Facility at a weighted average interest rate of 4.0% and 3.7%, respectively. At December 31, 2018 and 2017, there was $900.0 million and $1.2 billion outstanding under the Term Loan component of the Senior Credit Facility at a weighted average interest rate of 3.9% and 3.6%, respectively.

The Senior Credit Facility is collateralized by substantially all of the assets of the Company’s U.S. subsidiaries, excluding intangible assets. The Senior Credit Facility is subject to various financial and negative covenants and at December 31, 2018 the Company was in compliance with all such covenants. The Company capitalized $4.2 million and $19.1 million of incremental financing costs in 2018 and 2017, respectively, in connection with the modifications of the Senior Credit Facility.

Contractual repayments of the Term Loan component of Senior Credit Facility are due as follows:

Year Ended December 31,	Principal Repayment (In thousands)
2019	$ 22,500
2020	45,000
2021	56,250
2022	67,500
2023	708,750
	$ 900,000

The outstanding balance of revolving credit component of the Senior Credit Facility is due on May 3, 2023.

Securitization Facility

During the fourth quarter of 2018, the Company entered into an accounts receivable securitization facility (the "Securitization Facility") under which accounts receivable of certain domestic subsidiaries are sold on a non-recourse basis to a special purpose entity (“SPE”), which is a bankruptcy-remote, consolidated subsidiary of the Company. Accordingly, the assets of the SPE are not available to satisfy the obligations of the Company or any of its subsidiaries. From time to time, the SPE may finance such accounts receivable with a revolving loan facility secured by a pledge of such accounts receivable. The amount of outstanding borrowings on the Securitization Facility at any

one time is limited to $150.0 million. The Securitization Facility agreement is for an initial three-year term and may be extended. The agreement governing the Securitization Facility contains certain covenants and termination events. An occurrence of an event of default or a termination event under this Securitization Facility may give rise to the right of its counterparty to terminate this facility. As of December 31, 2018, the Company was in compliance with the covenants,

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and none of the termination events had occurred. As of December 31, 2018, the Company had $121.2 million of outstanding borrowings under its Securitization Facility at a weighted average interest rate of 3.4%.

The fair value of outstanding borrowings of the Senior Credit Facility's revolving credit facility and Term Loan component at December 31, 2018 were approximately $322.2 million and $852.1 million, respectively. The fair value of the outstanding borrowing of the Securitization facility at December 31, 2018 was approximately $116.4 million. These fair values were determined by using a discounted cash flow model based on current market interest rates available to the Company. These inputs are corroborated by observable market data for similar liabilities and therefore classified within Level 2 of the fair value hierarchy. Level 2 inputs represent inputs that are observable for the asset or liability, either directly or indirectly and are other than active market observable inputs that reflect unadjusted quoted prices for identical assets or liabilities.

Letters of credit outstanding as of December 31, 2018 and 2017 totaled $0.6 million, respectively. There were no amounts drawn as of December 31, 2018.

6. DERIVATIVE INSTRUMENTS

Interest Rate Hedging

The Company’s interest rate risk relates to U.S. dollar denominated variable interest rate borrowings. The Company uses interest rate swap derivative instruments to manage earnings and cash flow exposure resulting from changes in interest rates. These interest rate swaps apply a fixed interest rate on a portion of our expected LIBOR-indexed floating-rate borrowings.

The Company held the following interest rate swaps as of December 31, 2018 (dollar amounts in thousands):

Hedged Item	Current Notional Amount	Designation Date	Effective Date	Termination Date	Fixed Interest Rate	Floating Rate	Estimated Fair Value Assets (Liabilities)
3-month USD LIBOR Loan	$50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	$ 410
3-month USD LIBOR Loan	50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	415
1-month USD LIBOR Loan	50,000	July 12, 2016	December 31, 2016	June 30, 2019	0.825%	1-month USD LIBOR	418
3-month USD LIBOR Loan	50,000	February 6, 2017	June 30, 2017	June 30, 2020	1.834%	3-month USD LIBOR	619
1-month USD LIBOR Loan	100,000	February 6, 2017	June 30, 2017	June 30, 2020	1.652%	1-month USD LIBOR	1,287
1-month USD LIBOR Loan	100,000	March 27, 2017	December 31, 2017	June 30, 2021	1.971%	1-month USD LIBOR	1,246
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD LIBOR	1,491
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD	1,460

1-month USD LIBOR Loan	100,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	418
1-month USD LIBOR Loan	50,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	162
1-month USD LIBOR Loan	200,000	December 13, 2017	January 1, 2018	December 31, 2024	2.313%	1-month USD LIBOR	2,076
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.220%	1-month USD LIBOR	(2,594)
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.199%	1-month USD LIBOR	(2,551)
1-month USD LIBOR Loan	75,000	October 10, 2018	July 1, 2020	June 30, 2025	3.209%	1-month USD LIBOR	(2,568)
1-month USD LIBOR Loan	100,000	December 18, 2018	December 30, 2022	December 31, 2027	2.885%	1-month USD LIBOR	(797)
1-month USD LIBOR Loan	100,000	December 18, 2018	December 30, 2022	December 31, 2027	2.867%	1-month USD LIBOR	(873)
Total interest rate derivatives designated as cash flow hedges	$1,475,000						$ 619

The Company held the following interest rate swaps as of December 31, 2017 (dollar amounts in thousands):

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

Hedged Item	Current Notional Amount	Designation Date	Effective Date	Termination Date	Fixed Interest Rate	Floating Rate	Estimated Fair Value Assets (Liabilities)
3-month USD LIBOR Loan	$50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	$ 675
3-month USD LIBOR Loan	50,000	June 22, 2016	December 31, 2016	June 30, 2019	1.062%	3-month USD LIBOR	672
1-month USD LIBOR Loan	50,000	July 12, 2016	December 31, 2016	June 30, 2019	0.825%	1-month USD LIBOR	779
3-month USD LIBOR Loan	50,000	February 6, 2017	June 30, 2017	June 30, 2020	1.834%	3-month USD LIBOR	318
1-month USD LIBOR Loan	100,000	February 6, 2017	June 30, 2017	June 30, 2020	1.652%	1-month USD LIBOR	858
1-month USD LIBOR Loan	100,000	March 27, 2017	December 31, 2017	June 30, 2021	1.971%	1-month USD LIBOR	337
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD LIBOR	(455)
1-month USD LIBOR Loan	150,000	December 13, 2017	January 1, 2018	December 31, 2022	2.201%	1-month USD LIBOR	(434)
1-month USD LIBOR Loan	100,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	(684)
1-month USD LIBOR Loan	50,000	December 13, 2017	July 1, 2019	June 30, 2024	2.423%	1-month USD LIBOR	(255)
1-month USD LIBOR Loan	200,000	December 13, 2017	January 1, 2018	December 31, 2024	2.313%	1-month USD LIBOR	(1,219)
Total interest rate derivatives designated as cash flow hedges	$1,050,000						$ 592

The Company designated these derivative instruments as cash flow hedges. Changes in the fair value of a derivative that is designated as a cash flow hedge and is highly effective are recorded in accumulated other comprehensive income / (loss) until the underlying transaction affects earnings and are then reclassified to earnings in the same account as the hedged transaction. If the hedged cash flow does not occur, or if it becomes probable that it will not occur, the Company will reclassify the amount of any gain or loss on the related cash flow hedge to interest expense at that time.

Foreign Currency Hedging

From time to time the Company enters into foreign currency hedge contracts intended to protect the U.S. dollar value of certain forecasted foreign currency denominated transactions. For contracts that are designated as hedging instruments, the Company assesses the effectiveness of the contracts. The change in fair value of foreign currency cash flow hedges are recorded in AOCI, net of tax, until the hedged item affects earnings. Once the related hedged item affects earnings, the Company reclassifies amounts recorded in AOCI to earnings. If the hedged forecasted transaction does not occur, or if it becomes probable that it will not occur, the Company will reclassify the amount of any gain or loss on the related cash flow hedge to earnings at that time. For contracts not designated as hedging instruments, the change in fair value of the contracts are recognized in other income (expense), net in the consolidated statements of operation, along with the offsetting foreign currency gain or loss on the underlying assets or liabilities. The success of the Company’s hedging program depends, in part, on forecasts of certain activity denominated in foreign currencies. The Company may experience unanticipated currency exchange gains or losses to the extent that there are differences between forecasted and actual activity during periods of currency volatility. In addition, changes in currency exchange rates related to any unhedged transactions may affect its earnings and cash flows.

On November 28, 2017, the Company entered into a foreign currency forward contract, with a notional amount of $8.9 million to mitigate the foreign currency exchange risk related to a certain intercompany loan denominated in Swiss Francs ("CHF"). The contract is not designated as a hedging instrument. For the years ended December 31, 2018 and 2017, the Company recognized a $0.2 million loss and a $0.1 million gain, respectively, from the change in fair value of the contract, which was included in other income (expense), net in the consolidated statement of operations. The foreign currency forward contract was settled on September 28, 2018.

Cross-Currency Rate Swaps

On October 2, 2017, the Company entered into cross currency swap agreements to convert a notional amount of $300.0 million equivalent to 291.2 million of CHF denominated intercompany loans into U.S. dollars. The CHF denominated intercompany loans were the result of the purchase of intellectual property by a subsidiary in Switzerland as part of the Codman Acquisition. The objective of these cross-currency swaps is to reduce volatility of earnings and cash flows associated with changes in the foreign currency exchange rate. Under the terms of these contracts, which have been designated as cash flow hedges, the Company will make interest payments in Swiss Francs and receive interest in U.S. dollars. Upon the maturity of these contracts, the Company will pay the principal amount of the loans in Swiss Francs and receive U.S. dollars from the counterparties.

The Company held the following cross-currency rate swaps designated as cash flow hedges as of December 31, 2018 and 2017 (dollar amounts in thousands):

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

	Effective Date	Termination Date	Fixed Rate	Aggregate Notional Amount	2018 Fair Value Asset (Liability)	2017 Fair Value Asset (Liability)
Pay CHF Receive U.S.$	October 2, 2017	October 2, 2020	1.75% 4.38%	CHF 97,065 $ 100,000	$ (215)	$ (742)
Pay CHF Receive U.S.$	October 2, 2017	October 2, 2021	1.85% 4.46%	CHF 48,533 $ 50,000	(422)	(610)
Pay CHF Receive U.S.$	October 2, 2017	October 2, 2022	1.95% 4.52%	CHF 145,598 $ 150,000	(2,193)	(2,605)
Total					$ (2,830)	$ (3,957)

The cross-currency swaps are carried on the consolidated balance sheet at fair value, and changes in the fair values are recorded as unrealized gains or losses in AOCI. For the years ended December 31, 2018 and 2017, the Company recorded a gain of $2.2 million and $1.1 million, respectively, in other income, net related to change in fair value related to the foreign currency rate translation to offset the gains or losses recognized on the intercompany loan.

For the years ended December 31, 2018 and 2017, the Company recorded a gain of $9.1 million and loss $2.1 million, respectively, in AOCI related to change in fair value of the cross-currency swaps.

For the years ended December 31, 2018 and 2017, the Company recorded a gain of $7.9 million and $1.9 million, respectively, in other income, net included in the consolidated statements of operations related to the interest rate differential of the cross-currency swaps.

The estimated gain that is expected to be reclassified to other income, net from AOCI as of December 31, 2018 within the next twelve months is $7.6 million. As of December 31, 2018, the Company does not expect any gains or losses will be reclassified into earnings as a result of the discontinuance of these cash flow hedges because the original forecasted transaction will not occur.

Net Investment Hedges

The Company manages certain foreign exchange risks through a variety of strategies, including hedging. The Company is exposed to foreign exchange risk in its international operations from foreign currency purchases, net investments in foreign subsidiaries, and foreign currency assets and liabilities created in the normal course of business.

For net investment hedges, the effective portion of the gains and losses on the instruments arising from the effects of foreign exchange are recorded in the currency translation adjustment component of accumulated other comprehensive income / (loss), consistent with the underlying hedged item.

On October 1, 2018, the Company entered into cross-currency swap agreements designated as net investment hedges to partially offset the effects of foreign currency translation on foreign subsidiaries.

The Company held the following cross-currency rate swaps designated as net investment hedges as of December 31, 2018 (dollar amounts in thousands):

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

	Effective Date	Termination Date	Fixed Rate	Aggregate Notional Amount	Fair Value Asset (Liability)
Pay EUR Receive U.S.$	October 3, 2018	September 30, 2021	— 3.01%	EUR 70,738 $ 82,000	1,359
Pay EUR Receive U.S.$	October 3, 2018	September 30, 2023	— 2.57%	EUR 51,760 $ 60,000	(421)
Pay EUR Receive U.S.$	October 3, 2018	September 30, 2025	— 2.19%	EUR 38,820 $ 45,000	(150)
Pay GBP Receive U.S.$	October 3, 2018	September 30, 2025	1.67% 2.71%	GBP 128,284 $ 167,500	2,360
Pay CHF Receive GBP	October 3, 2018	September 30, 2025	— 1.67%	CHF 165,172 GBP 128,284	(3,780)
Total					$ (632)

The cross-currency swaps were carried on the consolidated balance sheet at fair value, and changes in the fair values were recorded as unrealized gains or losses in AOCI. For the year ended December 31, 2018, the Company recorded a gain of $1.7 million in AOCI related to the change in fair value of the cross-currency swaps.

For the year ended December 31, 2018, the Company recorded a gain of $2.4 million in interest income included in the consolidated statements of operations related to the interest rate differential of the cross-currency swaps.

The estimated gain that is expected to be reclassified to interest income from AOCI as of December 31, 2018 within the next twelve months is $8.9 million.

Counterparty Credit Risk

The Company manages its concentration of counterparty credit risk on its derivative instruments by limiting acceptable counterparties to a group of major financial institutions with investment grade credit ratings, and by actively monitoring their credit ratings and outstanding positions on an ongoing basis. Therefore, the Company considers the credit risk of the counterparties to be low. Furthermore, none of the Company’s derivative transactions are subject to collateral or other security arrangements, and none contain provisions that depend upon the Company’s credit ratings from any credit rating agency.

Fair Value of Derivative Instruments

The Company has classified all of its derivative instruments within Level 2 of the fair value hierarchy because observable inputs are available for substantially the full term of the derivative instruments. The fair values of the interest rate swaps and cross-currency swaps were developed using a market approach based on publicly available market yield curves and the terms of the swap. The Company performs ongoing assessments of counterparty credit risk.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The following table summarizes the fair value and presentation in the consolidated balance sheet for derivatives designated as hedging instruments:

	Fair Value as of December 31,	
	2018	2017
Location on Balance Sheet [1]:	(In thousands)	
Derivatives designated as hedges — Assets:		
Prepaid expenses and other current assets		
Cash Flow Hedges		
Interest rate swap[2]	$4,654	$1,521
Cross-currency swap	7,615	7,757
Net Investment Hedges		
Cross-currency swap	$8,888	$—
Other assets		
Cash Flow Hedges		
Interest rate swap[2]	5,350	2,491
Net Investment Hedges		
Cross-currency swap	$1,774	$—
Total Derivatives designated as hedges — Assets	$28,281	$11,769
Derivatives designated as hedge — Liabilities		
Accrued expenses and other current liabilities		
Cash Flow Hedges		
Interest rate swap[2]	$—	$1,845
Other liabilities		
Cash Flow Hedges		
Interest rate swap[2]	9,385	1,575
Cross-currency swap	10,445	11,714
Net Investment Hedges		
Cross-currency swap	$11,294	$—
Total Derivative designated as hedges — Liabilities	$31,124	$15,134

(1) The Company classifies derivative assets and liabilities as current based on the cash flows expected to be incurred within the following 12 months.

(2) At December 31, 2018 and 2017, the total notional amounts related to the Company's interest rate swaps were $1.5 billion and $1.1 billion, respectively.

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

The following presents the effect of derivative instruments designated as cash flow hedges and net investment hedges on the accompanying consolidated statements of operations during the years ended December 31, 2018 and 2017:

	Balance in AOCI Beginning of Year	Amount of Gain (Loss) Recognized in AOCI	Amount of Gain (Loss) Reclassified from AOCI into Earnings	Balance in AOCI End of Year	Location in Statements of Operations
	(In thousands)				
Year Ended December 31, 2018					
Cash Flow Hedges					
Interest rate swap	$592	$ 924	$ 897	$ 619	Interest income (expense)
Cross-currency swap	(5,104)	9,062	10,148	(6,190)	Other income (expense)
Net Investment Hedges					
Cross-currency swap	—	1,723	2,355	(632)	Interest income (expense)
	$(4,512)	$ 11,709	$ 13,400	$ (6,203)	
Year Ended December 31, 2017					
Cash Flow Hedges					
Interest rate swap	$1,871	$ (1,355)	$ (76)	$ 592	Interest income (expense)
Cross-currency swap	—	(2,070)	3,034	(5,104)	Other income (expense)
	$1,871	$ (3,425)	$ 2,958	$ (4,512)	

INTEGRA LIFESCIENCES HOLDINGS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (continued)

7. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill

During the third quarter of 2018, the Company elected to bypass the qualitative assessment for its three reporting units and perform a quantitative test. The assumptions used in evaluating goodwill for impairment are subject to change and are tracked against historical results by management.

The Company estimated the fair value of its three reporting units using a discounted cash flow model, which incorporates significant estimates and assumptions made by management which, by their nature, are characterized by uncertainty. Inputs used to fair value the Company's reporting units are considered inputs of the fair value hierarchy. For Level 3 measurements, significant increases or decreases in long-term growth rates or discount rates in isolation or in combination could result in a significantly lower or higher fair value measurement. The key assumptions impacting the valuation included the following:

- The reporting unit's financial projections, which are based on management's assessment of regional and macroeconomic variables, industry trends and market opportunities, and the Company's strategic objectives and future growth plans.
- The projected terminal value for the reporting unit, which represents the present value of projected cash flows beyond the last period in the discounted cash flow analysis. The terminal value reflects the Company's assumptions related to long-term growth rates and profitability, which are based on several factors, including local and macroeconomic variables, market opportunities, and future growth plans.
- The discount rate used to measure the present value of the projected future cash flows is set using a weighted-average cost of capital method that considers market and industry data as well as the Company's specific risk factors that are likely to be considered by a market participant. The weighted-average cost of capital is the Company's estimate of the overall after-tax rate of return required by equity and debt holders of a business enterprise. In performing this test, the Company utilized a discount rate of 9.0%.

Given the excess of the estimated fair values over their carrying values, no impairment was recognized.

Changes in the carrying amount of goodwill in 2018 and 2017 were as follows:

	Codman Specialty Surgical	Orthopedics and Tissue Technologies	Total
	(In thousands)		
Goodwill at January 1, 2017	$284,358	$ 226,213	$510,571
Derma Sciences acquisition	—	73,765	73,765
Codman acquisition	346,220	—	346,220
Divestment to Natus	(2,861)	—	(2,861)
Foreign currency translation and other	7,050	3,160	10,210
Goodwill at December 31, 2017	$634,767	$ 303,138	$937,905
Codman acquisition measurement period adjustments	(3,964)	—	(3,964)
Foreign currency translation	(5,043)	(2,423)	(7,466)
Goodwill at December 31, 2018			