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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

(Mark One)

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2019
or
☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the transition period from to .
Commission File Number 001-33092

LEMAITRE VASCULAR, INC.

(Exact name of registrant as specified in its charter)

Delaware	**04-2825458**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
63 Second Avenue, Burlington, Massachusetts	**01803**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code 781-221-2266

Securities registered under Section 12(b) of the Act:

Title of each class	Trading symbol	Name of exchange on which registered
Common stock, $0.01 par value per share	LMAT	The Nasdaq Global Market

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: ☐ No: ☑

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

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

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant 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 ☑ No ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule12b-2 of the Exchange Act.

Large accelerated filer ☐ Accelerated filer ☑ Non-accelerated filer ☐

Smaller reporting company ☐ Emerging growth company ☐

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

Indicate by check mark whether the registrant is a shell company (as defined in Rule12b-2 of the Act). Yes: ☐ No: ☑

The aggregate market value of the voting and non-voting common stock held by non-affiliates of the registrant was $261,775,368 computed by reference to the last reported sale price of $27.98 per share as reported by The Nasdaq Global Market as of the last business day of the registrant's most recently completed second fiscal quarter. For purposes of this calculation, shares held by stockholders whose ownership exceeded 5% of the registrant's common stock outstanding were deemed to be held by affiliates. Exclusion of such shares should not be construed to indicate that any such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant or that such person is controlled by or under common control with the registrant.

At March 2, 2020, the registrant had 20,178,506 shares of common stock, par value $0.01 per share, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Part III of this Form 10-K incorporates information by reference from the registrant's definitive proxy statement to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year covered by this annual report.

LEMAITRE VASCULAR

2019 ANNUAL REPORT ON FORM 10-K
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PART I

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements (within the meaning of the federal securities law) that involve substantial risks and uncertainties, particularly risks related to the regulatory environment, our common stock, fluctuations in our quarterly and annual results, our ability to successfully integrate acquisitions into our business, and risks related to our business and industry generally, such as risks inherent in the process of developing and commercializing products and services that are safe and effective for use in the peripheral vascular disease market. All statements, other than statements of historical facts, included in this Annual Report on Form 10-K regarding our strategy, future operations, future financial position, future net sales, gross margin expectations, projected costs, projected expenses, prospects and plans and objectives of management are forward-looking statements. The words “anticipates,” “believes,” “estimates,” “expects,” “intends,” “may,” “plans,” “projects,” “will,” “would,” and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. We have based these forward-looking statements on our current expectations and projections about future events. Although we believe that the expectations underlying any of our forward-looking statements are reasonable, these expectations may prove to be incorrect, and all of these statements are subject to risks and uncertainties. Should one or more of these risks and uncertainties materialize, or should underlying assumptions, projections, or expectations prove incorrect, our actual results, performance, or financial condition may vary materially and adversely from those anticipated, estimated, or expected. No forward-looking statement can be guaranteed and actual results may vary materially from those projected in the forward-looking statements. We intend to take advantage of the Safe Harbor provisions of the Private Securities Litigation Reform Act of 1995 regarding our forward-looking statements, and are including this sentence for the express purpose of enabling us to use the protections of the safe harbor with respect to all forward-looking statements. We have included important factors in the cautionary statements included in this Annual Report on Form 10-K, particularly in the section entitled “Risk Factors,” that we believe could cause actual results or events to differ materially from the forward-looking statements that we make. Our forward-looking statements do not reflect the potential impact of any future acquisitions, mergers, dispositions, joint ventures, investments or terminations of distribution arrangements that we may make. These statements, like all statements in this report, speak only as of the date of this Annual Report on Form 10-K (unless another date is indicated), and we undertake no obligation to update or revise these statements in light of future developments. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events, or otherwise, except as required by law.

The following discussion should be read in conjunction with our financial statements and the related notes contained elsewhere in this Annual Report on Form 10-K and in our other Securities and Exchange Commission filings.

Unless the context requires otherwise, references to “LeMaitre Vascular,” “LeMaitre,” “we,” “our,” and “us” in this Annual Report on Form 10-K refer to LeMaitre Vascular, Inc. and its subsidiaries.

LeMaitre, AlboGraft, AnastoClip, AnastoClip GC, Cardial, CardioCel, Dialine, Eze-Sit, Glow ‘N Tell, InvisiGrip, LeMaitre Valvulotome, LeverEdge, LifeSpan, MollRing Cutter, Omniflow, ProcCol, Pruitt, Pruitt F3, Pruitt-Inahara, Python, Reddick, RestoreFlow, Syntel, VascuCel, VascuTape, TRIVEX, Wovex, XenoSure, and the LeMaitre Vascular logo are registered trademarks of LeMaitre Vascular or one of its subsidiaries, and AlboSure, Chevalier, DuraSure, EndoRE, Flexcel, MultiTASC, Periscope, and PeriVu are unregistered trademarks of LeMaitre Vascular. This Annual Report on Form 10-K also includes the registered and unregistered trademarks of other persons, which are the property of their respective owners. Solely for convenience, trademarks and trade names referred to in this report may appear without the ® or TM symbols.

Item 1. Business

Overview

LeMaitre Vascular is a global provider of medical devices and human tissue cryopreservation services largely used in the treatment of peripheral vascular disease. We develop, manufacture, and market vascular devices to address the needs of vascular surgeons and other specialties such as cardiac surgeons and neurosurgeons. Our diversified portfolio of devices consists of brand name products that are used in arteries and veins outside of the heart and are well known to vascular surgeons, and includes the LeMaitre valvulotome, the XenoSure biologic patch, the Pruitt F3 carotid shunt, VascuTape radiopaque tape, and Syntel embolectomy catheters. Our principal product offerings are sold throughout the world, primarily in the United States, Europe and Asia/Pacific Rim. We estimate that the annual worldwide market that our core product lines address is approximately $900 million.

We sell our products and services primarily through a direct sales force. As of December 31, 2019 our sales force was comprised of 112 sales representatives in North America, Europe and Asia/Pacific Rim, including three export managers, one in each of the three geographic regions. Our worldwide headquarters is located in Burlington, Massachusetts, and we also have North American sales offices in Chandler, Arizona and Vaughan, Canada. Our European headquarters is located in Sulzbach, Germany, with additional European sales offices in Milan, Italy; Madrid, Spain; and Hereford, England. Our Asia/Pacific Rim headquarters is located in Singapore, with additional Asia/Pacific Rim sales offices in Tokyo, Japan; Shanghai, China; and North Melbourne, Australia. During the years ended December 31, 2019 and 2018, approximately 94% and 95%, respectively, of our net sales were generated in territories in which we employ direct sales representatives. We sell our products in other countries through distributors.

The Peripheral Vascular Disease Market

Based on industry statistics, we estimate that peripheral vascular disease affects more than 200 million people worldwide and that the annual worldwide market for all peripheral vascular devices exceeds $5 billion. The disease encompasses a number of conditions in which the arteries or veins that carry blood to or from the legs, arms, or organs other than the heart become narrowed, obstructed, weakened, or otherwise compromised. In many cases peripheral vascular disease goes undetected, sometimes leading to life-threatening events including stroke, ruptured aneurysm, pulmonary embolism or death. We believe that the peripheral vascular disease market will grow due to the increase in the incidence and diagnosis rates of peripheral vascular disease, a shift by doctors to using higher-priced endovascular devices, and the adoption of western healthcare standards in the developing world. Clinical studies have identified several factors that increase the risk of peripheral vascular disease, including smoking, diabetes, obesity, high blood pressure, lack of exercise, coronary artery disease, high cholesterol, and being over the age of 65. Demographic trends suggest an increase in the prevalence of peripheral vascular disease over time, driven primarily by rising levels of obesity and diabetes and an aging population. We believe that our strong brands, established sales force, evolving suite of peripheral vascular device offerings, and broad network of vascular surgeon customers position us to capture an increasing share of this large and growing market.

Vascular surgeons treat peripheral vascular disease and also perform vascular procedures associated with other diseases, such as end-stage renal disease. We estimate that there are more than 17,000 vascular surgeons worldwide, including 2,800 board-certified vascular surgeons and several thousand general surgeons who perform vascular procedures in the United States, as well as more than 3,000 vascular surgeons in Europe and Asia/Pacific Rim. In contrast to other medical specialists, such as interventional cardiologists and interventional radiologists, vascular surgeons perform both open vascular surgeries and endovascular procedures. Open vascular surgery involves opening the body, cutting vessels, and suturing. Endovascular procedures typically are minimally invasive, catheter-based procedures involving repairing vessels from within using real-time imaging. We estimate that in 2019, over 90% of our net sales were from devices used in open vascular procedures.

Our Business Strategies

We have grown our business by using a three-pronged strategy: focusing on the vascular surgeon call point, competing for sales in low rivalry niche markets, and expanding our growth platform through our worldwide direct sales force as well as acquiring and developing complementary vascular devices.

- ***Focused call point.*** We have historically directed our product offering and selling efforts towards the vascular surgeon, and estimate that in 2019 approximately 84% of our sales were to hospitals for use by vascular surgeons. As vascular surgeons are typically positioned to perform both open vascular surgeries and endovascular procedures, we sell devices in both the open and endovascular markets to the same end user. More recently we have begun to explore adjacent market customers, or non-vascular surgeon customers, who can be served by our vascular device technologies, such as cardiac surgeons and neurosurgeons.
- ***Low rivalry niche segments.*** We seek to build and maintain leading positions in niche product and services segments. We believe that the relative lack of competitive focus on these segments by larger competitors, as well as the differentiated features and consistent quality of our products, enable higher selling prices and market share gains. In recent years we have also sought to sell complementary offerings into larger, more competitive market segments, particularly when we believe that our offerings in those segments are differentiated, such as the Omniflow II biosynthetic graft or the RestoreFlow human tissue cryopreservation services.

- ***Direct sales force expansion, and the addition of complementary products through acquisitions and research and development.*** We sell our products primarily through a direct sales force in North America, Europe and Asia/Pacific Rim. Since 1998, we have built our sales force from zero to 112 direct sales representatives, including three export managers. We believe that direct-to-hospital sales build closer customer relationships, allow for higher selling prices and gross margins, and are not subject to the risk of customer loss related to distributor turnover. In countries where we do not have a direct sales force, we sell our products through distributors. For the year ended December 31, 2019, approximately 94% of our net sales were generated through our direct-to-hospital sales force, and no single hospital customer accounted for more than 2% of our net sales. We intend to further expand and diversify our product offerings and add new technology platforms. We believe our experience acquiring and integrating product lines and businesses is one of our competitive advantages. We evaluate the acquisition of additional product lines and businesses that may be complementary to our product offerings, refine our current product lines, develop new applications for our existing technologies, and obtain regulatory approvals for our devices in new segments and geographies in order to further access the broader peripheral vascular device market and select other markets.

Acquisition History

We were founded in 1983 by George D. LeMaitre, M.D., a vascular surgeon who designed and developed the LeMaitre Valvulotome. Through a combination of strategic acquisitions and research and development efforts, we have expanded to 15 product lines. We have completed 23 acquisitions of complementary products since 1998:

Year	Acquisition	Key Product(s) and Services
1998	Whittaker Screen Printing	Radiopaque tape manufacturing operations
1999	Vermed	Embolectomy catheters
2001	Ideas for Medicine	Carotid shunts, balloon catheters, and laparoscopic cholecystectomy devices
2003	Credent	Polycarbonate grafts
2004	VCS Clip	Vessel closure systems
2005	Endomed	Stent grafts
2007	Vascular Innovations	Contrast injector
2007	Vascular Architects	Remote endarterectomy devices
2007	UnBalloon	Stent graft modeling catheters
2007	Biomateriali	Polyester grafts and patches
2010	LifeSpan	ePTFE grafts
2012	XenoSure	Biologic patches
2013	Clinical Instruments	Carotid shunts and embolectomy catheters
2013	TRIVEX	Powered phlebectomy system
2014	Xenotis Pty Ltd	Biosynthetic grafts
2014	PeriVu	Angioscopes
2015	Tru-Incise (Eze-Sit) OUS	Valve cutters
2016	ProCol	Biologic grafts
2016	RestoreFlow	Human tissue cryopreservation services
2018	Syntel and Python	Embolectomy catheters
2018	Cardial	Polyester grafts, valvulotomes, surgical glue
2019	Tru-Incise (Eze-Sit) US	Valve cutters
2019	CardioCel and VascuCel	Biologic patches

We have relocated the manufacturing operations associated with 15 of our 23 acquisitions to our Burlington, Massachusetts headquarters and we continue to look at ways to make our operations more efficient. We purchase remote endarterectomy devices and powered phlebectomy systems from third parties. The manufacture of our biosynthetic vascular grafts take place in our North Melbourne, Australia facility and the human tissue processing and cryopreservation operations associated with RestoreFlow allografts take place in our Fox River Grove, Illinois facility. The manufacture of our Cardial devices takes place in our Saint-Etienne, France facility. We purchase our CardioCel and VascuCel patches from Admedus Ltd in Toowong, Australia.

Our Products and Services

We have a portfolio of 15 product lines, most of which are designed to treat vascular disease, and most of which are designed for use in open vascular surgery. We also provide services related to the processing and cryopreservation of human vascular tissue. Our products and services address various anatomical areas including the carotid arteries, lower extremities, upper extremities, aorta and other areas. In 2019, the lower extremities product lines and services were 51% of revenues, the carotid artery product lines comprised 31% of revenues, and other areas combined were 18%. In 2018, the lower extremities product lines and services were 51% of revenues, the carotid artery product lines comprised 34% of revenues, and other areas combined were 15%. In 2017, the lower extremities product lines and services were 51% of revenues, the carotid artery product lines comprised 32% of revenues, and other areas combined were 17%. No single product line accounted for more than 25% of our revenues in 2019, 2018 or 2017.

Of our 15 product offerings, six are biologic devices that are implanted in the patient, and one is the service of processing and cryopreserving human tissue for implantation into the patient. These offerings include the XenoSure patch (bovine pericardium), CardioCel and VascuCel bio-scaffold patches (bovine pericardium), ProCol graft (bovine mesenteric vein), Omniflow II biosynthetic graft (ovine tissue and synthetic mesh), surgical glue (porcine gelatin) and the RestoreFlow Allograft cryopreserved graft (human tissue). As a percentage of sales, these biologic product lines represented 35% in 2019, 36% in 2018, and 34% in 2017.

Angioscopes

The PeriVu Disposable Angioscope is a fiberoptic catheter used for viewing the lumen of a blood vessel. It also provides direct visualization of valves during in-situ bypass procedures.

Balloon Catheters for Embolectomy, Thrombectomy, Occlusion and Perfusion

Our LeMaitre and Syntel lines of embolectomy catheters are used to remove blood clots from arteries or veins. We sell single-lumen latex and latex-free embolectomy catheters as well as dual-lumen latex and latex-free embolectomy catheters. The dual-lumen embolectomy catheters enable clot removal and simultaneous irrigation or guide-wire trackability. Our Syntel thrombectomy catheter features a silicone balloon and is designed for removing thrombi in the venous system. Occlusion catheters temporarily occlude blood flow to allow the vascular surgeon time and space to complete a given procedure. Perfusion catheters temporarily perfuse blood and other fluids into the vasculature. Our Pruitt line of occlusion and perfusion catheters reduces vessel trauma by using internal balloon fixation rather than traditional external clamp fixation.

Carotid Shunts

Our Pruitt F3, Pruitt F3-S, Pruitt-Inahara and Flexcel carotid shunts are used to temporarily shunt blood to the brain while the surgeon removes plaque from the carotid artery in a carotid endarterectomy surgery. Our Pruitt F3, Pruitt F3-S and Pruitt-Inahara shunts feature internal balloon fixation rather than traditional external clamp fixation, reducing vessel trauma. Our Flexcel shunt is a non-balloon shunt offered for surgeons who prefer to shunt with external clamp fixation.

Powered Phlebectomy Device

Our TRIVEX powered phlebectomy system is comprised of capital equipment and disposables that enable removal of varicose veins. In this procedure, an illuminator is inserted through a small incision in the leg, enabling visualization of varicose veins. A second instrument removes the veins. Compared to conventional hook phlebectomy, this surgical procedure is faster and results in more complete vein removal through fewer incisions.

Radiopaque Tape

Our VascuTape Radiopaque Tape is a flexible, medical-grade tape with centimeter or millimeter markings printed with our proprietary radiopaque ink that is visible both to the eye and to an x-ray machine or fluoroscope. VascuTape Radiopaque Tape is applied externally to the skin and provides interventionalists with a simple way to cross-reference between the inside and the outside of a patient’s body, allowing them to locate tributaries or lesions beneath the skin.

Remote Endarterectomy Devices

Our EndoRE line of remote endarterectomy devices are used to remove plaque from arteries in the leg in a minimally invasive procedure requiring a single incision in the groin. Our EndoRE devices are used to separate the plaque from the vessel, cut the far end of the plaque to free it for removal, and then withdraw it from the vessel.

Valvulotomes

Our valvulotomes cut valves in the saphenous vein, a vein that runs from the foot to the groin, so the vein can function as an artery to carry blood past diseased arteries to the lower leg or the foot. We believe our valvulotomes reduce costs for hospitals by enabling bypass surgery to be performed with several small incisions rather than one continuous ankle-to-groin incision, thereby reducing the length of hospital stays and the likelihood of wound complications.

Vascular Grafts

Our AlboGraft, Wovex and Dialine II vascular grafts are collagen-impregnated polyester grafts used to bypass or replace diseased arteries. They are available in both straight tube and bifurcated versions.

Our LifeSpan ePTFE vascular graft is an expanded polytetrafluoroethylene (ePTFE) graft used to bypass or replace diseased arteries and to create dialysis access sites. LifeSpan is available in both regular and thin wall options and with an optional full or partial external spiral support. Our stepped and tapered LifeSpan models are designed to reduce the risk of steal syndrome and high cardiac output, complications that may arise in dialysis access grafts.

Our Omniflow II biosynthetic vascular graft is a composite of cross-linked ovine collagen with a polyester mesh endoskeleton. It is used to bypass or replace diseased leg arteries and to create dialysis access sites. This device is not currently available in the United States.

Our ProCol biologic graft is a bovine mesenteric vein used for dialysis access in patients with a previously-failed synthetic graft. Currently we distribute these grafts in the United States.

Through our RestoreFlow allograft business, we provide human tissue cryopreservation services, in particular the processing and cryopreservation of veins and arteries. Our RestoreFlow allografts are cryopreserved human tissue grafts, including saphenous veins, femoral veins and arteries, aortoiliac arteries and aortic and pulmonary valved conduits. These allografts are used in a variety of vascular reconstructions such as peripheral bypass, hemodialysis access, and aortic infections. Currently we offer these cryopreservation services in the United States and Canada.

Vascular and Cardiac Patches

Our XenoSure biologic patches are made from bovine pericardium, and is used primarily for closure of vessels after surgical intervention. Our AlboSure Vascular Patch is a polyester patch used primarily for vessel closure after surgical intervention.

Our VascuCel and CardioCel biologic patches are acellular, collagen bioscaffolds with optimized biocompatibility and zero aldehyde toxicity. These patches are used in vessel repair as well as heart repair and reconstruction, including more intricate neonatal repairs.

Closure Systems

Our AnastoClip AC and AnastoClip GC closure systems attach vessels to one another with titanium clips instead of sutures. These closure systems create an interrupted anastomosis that expands and contracts as the vessel pulses, which surgeons believe improves the durability of the anastomosis. The AnastoClip AC and AnastoClip GC closure systems also facilitate compliant dura closure in neuro applications.

Surgical Glue

Our Cardial surgical glue is a biologic-based glue that is typically used for joining dissected vessel layers and reinforcing sutures in cardiac and vascular procedures.

Sales and Marketing

As of December 31, 2019, we employed 112 field sales representatives, including three export managers. We believe the expansion of our sales force since 1998 has been a key success factor, and it remains one of our primary long-term strategies. Over 94% of net sales occurred in territories in which we employ field sales representatives.

Outside our direct markets, we generally sell our products through country-specific distributors, such as South Korea, Russia and Brazil.

In addition, we engage in direct marketing efforts, including direct mail and exhibitions at medical congresses, which we believe are important to our brand development. We believe that direct marketing allows us to market to vascular surgeons who are beyond the reach of our direct sales force.

We also provide training to our vascular surgeon customers on specific vascular surgery procedures including in situ or peripheral bypass, carotid endarterectomy and interrupted anastomosis. More recently we initiated a general surgical skills training program targeted to less experienced doctors as a way to introduce them to our product offerings.

Research and Development

Our research and development activities have historically focused on developing enhancements and extensions to our existing product lines. In 2018, our efforts were primarily focused on expanding and enhancing our biologic product lines including XenoSure and Omniflow II, and the integration of our ProCol manufacturing into our Burlington facility. We also introduced quality-based improvements to the design of the LeMaitre valvulotome as well as our powered phlebectomy system, TRIVEX. In 2019, our focus remained on biologic products, launching a biologic dural patch for use in open neuro-surgery procedures, and the integration of Omniflow II manufacturing into our Burlington facility. In addition, we undertook a project to begin distribution of cardiac allografts for use in pediatric and adult cardiac replacement and repair. Finally, we continued development on a next-generation powered phlebectomy system.

All of our products are subject to our design control procedures throughout the various stages of product development. These procedures may include bench testing, animal testing, human cadaveric studies and human clinical trials conducted by independent physicians, and post-market surveillance of product performance, as appropriate. We may use feedback received from independent physicians to demonstrate product functionality before commencing full-scale marketing of any product.

Our regulatory and clinical efforts have historically been focused largely on obtaining and maintaining regulatory approvals in geographies worldwide. In the past we have not conducted clinical trials as we have generally acquired product lines with regulatory approvals already established. In addition, we preferred to avoid the time, expense and risk associated with initiating clinical trials. However, increasing regulatory requirements in many geographies has resulted in the need for more clinical and non-clinical (i.e., animal) testing. As such, this component of our research and development spending has increased in recent years. In 2017 we initiated a clinical trial in an effort to obtain the approval of our XenoSure device in China. The trial requires the enrollment of 325 patients and we expect to complete the trial in 2020 and make our submission to the Chinese National Medical Products Administration (NMPA) in 2021.

In 2017 the EU adopted new regulations for medical devices (MDR), which replace the European Medical Devices Directive (93/42/EC as amended by 2007/47/EC) (MDD) and apply after a three year transition period ending on May 26, 2020. After this date, our MDD certificates will remain valid until their expiration dates, which range from May 2020 to May 2024. Our products will then be subject to the MDR, which require all of our products, regardless of classification, to obtain a new CE mark in accordance with the new, more stringent standards under the MDR. Going forward, we expect a significant portion of our regulatory and clinical time and expenses to be devoted to this transition.

Manufacturing and Processing

Our primary manufacturing facilities are located in Burlington, Massachusetts, where most of our products are produced. We also have facilities in North Melbourne, Australia, where our Omniflow II product line is currently produced, Saint-Etienne, France where our Wovex and Dialine grafts, Chevalier valvulotomes and surgical glue are produced, and Fox River Grove, Illinois where RestoreFlow allografts are processed, cryopreserved, stored and distributed.

We typically integrate manufacturing of the newly acquired lines into our Burlington operations. However, our TRIVEX, EndoRE, CardioCel and VascuCel, and selected embolectomy catheters are currently manufactured by third parties. We completed a renovation of our manufacturing facility in Burlington in 2017 and in 2018 moved our ProCol biologic grafts into the space. In 2019 we completed the expansion of our biologic cleanroom in order to transfer the manufacturing of our Omniflow II biosynthetic graft from our North Melbourne, Australia facility. We expect the transfer to be completed in 2020. In 2018, we initiated a project to transfer the manufacturing of the embolectomy business assets we acquired from Applied Medical. We expect this transfer to be completed in 2020. In 2019 we leased a fifth Burlington building which will allow continued expansion of our manufacturing footprint.

We manufacture certain proprietary components, assemble most of our devices ourselves, and inspect, test, and package all of our finished products. By designing and manufacturing many of our products from raw materials, and assembling and testing as many of our subassemblies and products as practical, we believe we can maintain better quality control, ensure compliance with applicable regulatory standards and internal specifications, limit outside access to our proprietary technology, ensure adequate product supply, and make design modifications in a timely manner. We have custom-designed proprietary manufacturing and processing equipment and have developed proprietary enhancements for existing production machinery. Our products are built to stock.

We process and cryopreserve human tissue provided to us by qualified tissue procurement organizations in the United States. Donated human tissue is procured from deceased donors by these organizations. We have strict specifications regarding tissue we will accept for processing relating to, among other things, the physical condition and characteristics of the tissue and the donor, the medical history of the donor and certain test results of the donated tissue. We also use various supplies in connection with the processing and cryopreservation of human tissue, including certain proprietary solutions and antibiotics.

Our management information systems provide us with the ability to evaluate our performance, collect business intelligence, and make better strategic decisions. These systems include customer relationship management, order entry, invoicing, on-line inventory management, lot traceability, purchasing, shop floor control, and shipping and distribution analysis, as well as various accounting-oriented functions. During day-to-day operations, these systems enable us to track our products from order inception through the manufacturing process and then ultimately through delivery of the product to the customer.

We purchase components from, and have certain product lines manufactured by, third parties. Most of our components are readily available from several supply sources, but we do rely on single- and limited-source suppliers for several of our key product components and our third-party-manufactured products, most notably the purchase of CardioCel and VascuCel devices from Admedus Ltd. located in Toowong, Australia. While we do have a contractual arrangement with Admedus, we do not have contractual arrangements with many of our suppliers and manufacturers, and we order our supplies and products on an as-needed basis. There are relatively few, or in some cases no, alternative, validated sources of supply for these supplies, products and components. At any time, our suppliers could discontinue or become incapable of the manufacture or supply of these materials on acceptable terms or otherwise. We do not ordinarily carry a significant inventory of these supplies, products and components and identifying and qualifying additional or replacement suppliers, if required, may not be accomplished quickly or at all and could involve significant additional costs. To date, we have not experienced any significant supply disruptions from existing sources of supplies, products and components, but there is no guarantee that we will not experience such disruptions in the future.

Our Burlington, North Melbourne and Saint-Etienne manufacturing facilities have been certified to ISO 13485 quality management system standards, which enables us to satisfy certain regulatory requirements of the EU, Canada, and other foreign jurisdictions. Our Fox River Grove, Illinois facility has been accredited by the American Association of Tissue Banks for the processing, storage and distribution of cardiac and vascular tissue for transplantation and licensed by certain state agencies**.** Our manufacturing and processing facilities are subject to periodic inspections by various regulatory authorities and Notified Bodies (described below) to ensure compliance with domestic and non-U.S. regulatory requirements. See “Government Regulation” for further information. In August 2017, our Burlington facilities were audited by the U.S. Food and Drug Administration (FDA), and in January 2018, we underwent inspections by our European Notified Body, LRQA. In February 2018, our Fox River Grove facility was inspected by the FDA, and our North Melbourne operations were inspected by our notified body, TUV Rheinland. In February 2019, our Burlington facilities were audited by the Korean Ministry of Food and Drug Safety, and in March 2019, our Burlington facilities were audited under the Medical Device Single Audit Program (MDSAP) which covers routine inspection requirements for the United States, Canada, Japan, Australia and Brazil. The results of these inspections were satisfactory.

Competition

The segments in which our product lines compete are characterized by rapid change resulting from technological advances and scientific discoveries. No one company competes against all of our product lines; rather, we compete with a range of companies. Notable larger competitors include Baxter International, Inc., Boston Scientific Corporation, Cardiovascular Systems, Inc., Medtronic, Becton, Dickinson and Company, CryoLife, Inc., Edwards Lifesciences Corporation, Getinge AB, LifeNet Health, Inc., Terumo Medical Corporation, and W. L. Gore & Associates.

The success of our products relies on effective service support as well as superior product technology, quality, product and service availability, reliability, ease of use, cost-effectiveness, physician familiarity, and brand recognition. While we also compete on the basis of price, our products that are more technologically advanced than those of our competitors are sometimes sold at higher prices than our competitors. We believe that our continued success will depend on our ability to broaden and optimize our direct sales channel, acquire or develop additional complementary vascular devices, obtain regulatory and reimbursement approvals, maintain sufficient inventory, and retain skilled personnel. We also compete on the basis of procedure type. The treatment of peripheral vascular disease has experienced a shift from open vascular surgery towards minimally invasive endovascular procedures, and most of our products are used primarily in open vascular surgery. Our ability to compete effectively relies on keeping pace with existing or new product and technology offerings in the vascular device market, and the minimally invasive endovascular procedure segment in particular.

Many of our competitors have substantially greater financial, technological, research and development, regulatory, marketing, sales, and personnel resources than we do. Certain of these competitors are able to manufacture at lower costs and may therefore offer comparable products at lower prices, especially commodity products such as polyester and ePTFE vascular grafts. Certain of these competitors may also have greater experience in developing and improving products, obtaining regulatory approvals, and manufacturing and marketing such products. In the case of allografts, certain competitors may have an advantage in sourcing tissue due to higher volume purchases and longer term relationships with tissue procurement organizations. Additionally, some of our competitors may obtain patent protection or regulatory approval or clearance, or achieve product commercialization before us, any of which could materially adversely affect our business.

Intellectual Property

We believe that our success is dependent, to a certain extent, on the development and maintenance of proprietary aspects of our technologies. We rely on a combination of trade secret laws, patents, trademarks and confidentiality and invention assignment agreements to protect our intellectual property rights.

We maintain and license patents in the United States, Europe and other strategic locations relating to various aspects of certain of our products and/or manufacturing processes. The majority of our issued U.S. patents are set to expire at various times from 2020 to 2032.

Generally, for products that we believe are appropriate for patent protection, we will attempt to obtain patents in the United States and key markets of the EU. However, depending on circumstances, we may not apply for patents in all or any of those jurisdictions.

We manufacture, market, and sell our Periscope Dissector product pursuant to a license agreement with a third-party, which requires us to pay a royalty, determined as a percentage of our net sales for the underlying product. If we fail to make the required payments or otherwise fail to observe the terms of the license agreement, we may lose our ability to sell these products. We previously had similar license arrangements for our LifeSpan and TRIVEX product lines but these arrangements ended during 2019.

We believe that our brands have been an important factor in our success. We rely on common law and registered trademarks to protect our brands. Some of our registered trademarks are LeMaitre, XenoSure, Pruitt, VascuTape, Glow ‘N Tell and RestoreFlow, each of which is registered in the United States, the EU, or both, and in certain cases in other foreign countries.

We rely on trade secret protection for certain unpatented aspects of other proprietary technology. Most of our products are not protected by patents. Patent protection is not available where we acquire a commercialized product that is not patented, such as the embolectomy catheters we acquired from Applied Medical in September 2018 and the product lines we acquired from Becton, Dickinson in October 2018. In the past, other companies have independently developed or otherwise acquired comparable or substantially equivalent proprietary information and techniques, and there can be no assurance that others will not do so in the future or otherwise gain access to our proprietary technology or disclose such technology, or that we can meaningfully protect our trade secrets. We have a policy of requiring employees and consultants to execute confidentiality agreements upon the commencement of an employment or consulting relationship with us. Our confidentiality agreements also require our employees to assign to us all rights to any inventions made or conceived during their employment with us. We also generally require our consultants to assign to us any inventions made during the course of their engagement by us. There can be no assurance, however, that these agreements will provide meaningful protection or adequate remedies for us in the event of unauthorized use, transfer, or disclosure of confidential information or inventions.

The laws of foreign countries generally do not protect our proprietary rights to the same extent as do the laws of the United States and we may experience more difficulty enforcing our proprietary rights in certain foreign jurisdictions.

See “Item 1A. Risk Factors” for a description of certain risks associated with our intellectual property.

Government Regulation

Medical devices and human tissues are subject to regulation by the FDA, and, in some instances, other federal and state authorities and foreign governments.

United States Regulation of Medical Devices

Most of our products are medical devices subject to extensive regulation by the FDA under 21 United States Code Chapter 9, the Federal Food, Drug, and Cosmetic Act (the FDCA). FDA regulations govern, among other things, product development, testing, manufacturing, packaging, labeling, storage, clearance or approval, advertising and promotion, sales and distribution, and import and export.

Premarket Pathways

Most medical devices must receive either 510(k) clearance or Premarket Application approval (PMA approval) from the FDA prior to commercial distribution. Devices deemed to pose relatively less risk are placed in either class I or II, which requires the manufacturer to submit a premarket notification requesting permission for commercial distribution; this is known as 510(k) clearance. Some low-risk devices are exempted from this requirement. Class II devices may be subject to special controls, such as performance standards and FDA guidelines that are not applied to class I devices. Devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting, or implantable devices, or devices deemed not substantially equivalent to a previously 510(k)-cleared device or to a pre-amendment class III device (*i.e.*, one in commercial distribution before May 28, 1976) for which PMA applications have not been called, are placed in class III, which generally requires PMA approval. In all cases, a user fee is required for 510(k) submissions and PMA applications, which in the case of PMA applications can be very costly.

510(k) Clearance. To obtain 510(k) clearance, a manufacturer must submit a premarket notification demonstrating that the proposed device is substantially equivalent in intended use and performance to a "predicate device" (*i.e.*, a previously 510(k)-cleared class I or class II device or a pre-amendment class III device for which the FDA has not yet called for PMA applications). The FDA's 510(k) clearance pathway usually takes from three to twelve months, but it can take longer. In reviewing a premarket notification, the FDA may request additional information, including clinical data. Nearly all of our devices currently sold in the United States are marketed pursuant to the 510(k) clearance, with the exception of our ProCol biologic vascular graft.

After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change as specified by FDA guidelines, requires a new 510(k) clearance. The FDA requires each manufacturer to make this determination in the first instance, but the FDA can review any such decision. If the FDA disagrees with a manufacturer's decision not to seek a new 510(k) clearance, the agency may retroactively require the manufacturer to seek 510(k) clearance. The FDA also can require the manufacturer to cease marketing and/or recall the modified device until 510(k) clearance or PMA approval is obtained. Also, the manufacturer may be subject to significant regulatory fines or penalties.

PMA Approval. The PMA approval pathway requires proof of the safety and effectiveness of the proposed device to the FDA's satisfaction, making this pathway much more costly, lengthy, and uncertain. A PMA application must provide extensive preclinical and clinical trial data, as well as detailed information about the device and its components regarding, among other things, device design, manufacturing, and labeling. As part of the PMA review, the FDA will typically inspect the manufacturer's facilities for compliance with the Quality System Regulation (QSR) which imposes elaborate testing, control, documentation, and other quality assurance procedures on the manufacturing process.

If the FDA approves a PMA, the approved indications or claims may be more limited than those originally sought. The PMA can include post-approval conditions that the FDA believes to be necessary to ensure the safety and effectiveness of the device including, among other things, restrictions on labeling, promotion, sale, and distribution. Failure to comply with the conditions of approval can result in material adverse enforcement action, including the loss or withdrawal of the approval. Even after approval of a PMA, a new PMA or PMA supplement is required if the device or its labeling or manufacturing process are modified. Supplements to a PMA often require the submission of the same type of information required for an original PMA, except that the supplement is generally limited to that information needed to support the proposed change from the product covered by the original PMA.

Clinical Trials. A clinical trial is typically required to support a PMA application and is sometimes required to support 510(k) clearance. In some cases, one or more smaller feasibility Investigational Device Exemption (IDE) studies may precede a pivotal IDE clinical trial intended to comprehensively demonstrate the safety and effectiveness of the investigational device. All clinical studies of investigational devices must be conducted in compliance with the FDA's extensive requirements. If an investigational device could pose a significant risk to patients (as defined in the regulations), the FDA, prior to initiation of clinical use, must approve an IDE application showing that it is safe to test the device in humans and that the testing protocol is scientifically sound. A non-significant risk device does not require submission to the FDA of an IDE application. Both significant risk and non-significant risk investigational devices require approval from institutional review boards (IRBs) at the study centers where the device will be used. The FDA and the IRB at each institution at which a clinical trial is being performed may suspend a clinical trial at any time for various reasons, including a belief that the subjects are being exposed to an unacceptable health risk. During a study, the sponsor must comply with the FDA's IDE requirements for investigator selection, trial monitoring, reporting, record keeping, and prohibitions on the promotion of investigational devices. The investigators must obtain patient informed consent, rigorously follow the investigational plan and study protocol, control the disposition of investigational devices, and comply with all reporting and record-keeping requirements. Required records and reports are subject to inspection by the FDA. Prior to granting PMA approval, the FDA typically inspects the records relating to the conduct of the study and the clinical data supporting the PMA application for compliance with IDE requirements.

Although the QSR does not fully apply to investigational devices, the requirement for controls on design and development does apply. The sponsor also must manufacture the investigational device in conformity with the quality controls described in the IDE application and any conditions of IDE approval that FDA may impose with respect to manufacturing.

Historically, our products have been introduced into the market using the 510(k) clearance procedure, and we have not used the more burdensome PMA process for any of the products that we currently market or sell in the United States, other than our ProCol vascular graft, which had PMA approval at the time we acquired the device. If we were to seek Unites States approval for our Omniflow II biosynthetic vascular graft, for example, we would be required to follow the PMA process.

Postmarket Regulation

After a device is placed on the market, regardless of the classification or premarket pathway, significant regulatory requirements apply. These include:

- annual manufacturing establishment registration and device listing with the FDA;
- the QSR, which requires finished device manufacturers, including third-party or contract manufacturers, to follow stringent design, testing, control, documentation, and other quality assurance procedures in all aspects of manufacturing;
- labeling regulations and FDA prohibitions against the promotion of products for uncleared, unapproved, or off-label uses and other requirements related to promotional activities;
- medical device reporting regulations, which require 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 the malfunction were to recur; and
- corrections and removal reporting regulations, which require that manufacturers report to the FDA any field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the FDCA that may present a risk to health.

We are subject to inspection and marketing surveillance by the FDA to determine our compliance with regulatory requirements. The most recent FDA inspection of our Burlington facility was in August 2017, and our MDSAP was in March 2019, the results of which were satisfactory. Non-compliance with applicable FDA requirements can result in, among other things, public warning letters, fines, injunctions, civil penalties, recall or seizure of products, total or partial suspension of production, failure of the FDA to grant marketing approvals, withdrawal of marketing approvals, a recommendation by the FDA to disallow us to enter into government contracts, and criminal prosecutions. The FDA also has the authority to request repair, replacement, or refund of the cost of any device manufactured or distributed by us. In the event that one of our suppliers fails to maintain compliance with our quality requirements, we may have to qualify a new supplier and could experience manufacturing delays as a result.

Non-U.S. sales of medical devices manufactured in the United States that are not approved or cleared by the FDA for use in the United States, or are banned or deviate from lawful performance standards, are subject to FDA export requirements. Before exporting such products to a foreign country, we must first comply with the FDA's regulatory procedures for exporting unapproved devices.

United States Regulation of Human Tissue

FDA

Our allografts are subject to extensive regulation by the FDA under Title 21 of the Code of Federal Regulations, Part 1271 (Human Cells, Tissues, and Cellular and Tissue-Based Products). These regulations were promulgated under Section 361 of the Public Health Service Act, which authorized the FDA to issue regulations to prevent the spread of communicable disease. Under these regulations, the FDA requires registration of establishments that process human cells, tissues, and cellular and tissue-based products. These FDA regulations also establish donor-eligibility criteria, current good tissue practice and other procedures to prevent the introduction, transmission, and spread of communicable diseases by such products, including through donor screening and testing. Our Fox River Grove, Illinois facility and our Burlington, Massachusetts facility are both registered with the FDA's Center for Biologics Evaluation and Research as required by the regulations. The regulations also provide for the inspection of tissue establishments by the FDA. The FDA most recently inspected our Fox River Grove, Illinois facility in January 2018 and the results of that inspection were satisfactory. In the event of non-compliance with these regulations, the FDA may issue a warning letter, order the recall and/or destruction of tissues and/or order the suspension or cessation of processing and preservation of new tissues.

AATB

We voluntarily comply with the standards of the tissue bank industry's accreditation organization, the American Association of Tissue Banks (the AATB). The AATB has established standards for tissue banking and administers an accreditation program. Compliance with the AATB's standards are a predicate to accreditation, which must be renewed every three years. Our Fox River Grove, Illinois facility has been accredited by the AATB for the processing, storage and distribution of cardiac and vascular tissue for transplantation through May 13, 2021. Our Burlington, Massachusetts facility is also accredited for the storage and distribution of tissue. The AATB is entitled to inspect accredited members at any time. The AATB most recently inspected our Fox River Grove, Illinois facility in January 2018, and the results were satisfactory.

NOTA

Under the National Organ Transplant Act, it is unlawful for any person or entity to knowingly acquire, receive, or otherwise transfer any human organ for valuable consideration for use in human transplantation if the transfer affects interstate commerce. However, "valuable consideration" excludes the reasonable payments associated with the removal, transportation, implantation, processing, preservation, quality control, and storage of a human organ. We believe the compensation we receive for the processing and cryopreservation services we provide with respect to our allografts falls within this statutory exception.

State Regulation

Certain states regulate the processing, storage and distribution of human tissue. We are licensed or registered, as applicable, with California, Delaware, Florida, Illinois, Maryland, New York and Oregon. The regulatory agencies of these states may inspect our Fox River Grove, Illinois facility from time to time to monitor compliance with applicable state regulations.

Other U.S. Regulations

We, and our products and services, are also subject to a variety of state and local laws in those jurisdictions where our products and services are or will be marketed or distributed, and federal, state, and local laws relating to matters such as safe working conditions, manufacturing practices, environmental protection, fire hazard control, and disposal of hazardous or potentially hazardous substances. We are subject to various federal and state laws governing our relationships with the physicians and others who purchase or make referrals for our products. For instance, federal law prohibits payments of any form that are intended to induce a referral for any item payable under Medicare, Medicaid, or any other federal healthcare program. Many states have similar laws. There can be no assurance that we will not be required to incur significant costs to comply with such laws and regulations now or in the future or that such laws or regulations will not have a material adverse effect upon our ability to do business.

We are subject to federal, state, and local laws, rules, regulations, and policies governing the use, generation, manufacture, storage, air emission, effluent discharge, handling, and disposal of certain hazardous and potentially hazardous substances used in connection with our operations. Although we believe that we have complied with these laws and regulations in all material respects and to date have not been required to take any action to correct any noncompliance, there can be no assurance that we will not be required to incur significant costs to comply with environmental regulations in the future.

Non-U.S. Regulation of Medical Devices

Sales of medical devices are subject to regulatory requirements in many countries. The regulatory review process may vary greatly from country to country. The EU has adopted numerous directives and standards relating to medical devices regulating their design, manufacture, clinical trials, labeling, and adverse event reporting, including the Medical Devices Directive (93/42/EEC) (the MDD), which is applicable to our products. Devices that comply with the requirements of the MDD are entitled to bear a CE mark, indicating that the device conforms with the essential requirements of the applicable directive and can be commercially distributed in countries that are members of the EU, as well as Iceland, Lichtenstein, Norway, Turkey and Switzerland. Each member state of the EU has implemented the directives into its respective national law and has each established a "Competent Authority" to apply the directive in its territory.

The MDD defines a classification system placing devices into Class I, IIa, IIb, or III, depending on the risks and characteristics of the medical device. The MDD also defines the essential requirements that devices must meet before being placed on the market, establishes assessment procedures for approving a device for marketing, and creates mechanisms for national authorities to manage implementation or to intervene when public health requires. Essential requirements include manufacturing, design, performance, labeling, and safety requirements, and may include providing certain clinical data. These requirements vary based on the type of the device and other related factors.

A manufacturer of low-risk devices typically may demonstrate conformity to the essential requirements based on a self-declaration. The European Standardization Committees have adopted numerous harmonized standards for specific types of medical devices. Compliance with relevant standards establishes a presumption of conformity with the essential requirements. Manufacturers of higher-risk devices generally must use a "Notified Body"—an appointed independent third party to assess conformity. This third-party assessment may consist of an audit of the manufacturer's quality system and specific testing of the manufacturer's devices. An assessment by a Notified Body in one country within the EU is generally required in order for a manufacturer to commercially distribute the product throughout the EU. Most of our devices are considered higher-risk devices that require Notified Body assessment.

The European medical device laws also address the advertising and promotion of medical devices, clinical investigations, and requirements for handling adverse events. Post-market surveillance of medical devices in the EU is generally conducted on a country-by-country basis; however, the MDD sets forth certain specific requirements for reporting adverse events. The Medical Device Vigilance system is the mechanism by which adverse event reporting is managed and monitored in the EU.

Our products are regulated in the EU under the MDD. In order to market our medical devices in the EU, we are required to obtain CE mark certifications, which denote conformity to the essential requirements of the MDD. We have received CE mark certifications to sell nearly all of our products, though currently there is a lapse in our CE mark certifications for some of our products due to one of our Notified Bodies abandoning all services related to the MDD. On June 13, 2019, the Notified Body that issued the majority of our CE mark certifications, Lloyd's Register Quality Assurance or LRQA, notified its clients that it would cease providing all Notified Body services relating to the MDD to all clients, including us, as of September 12, 2019, which date was subsequently extended to September 30, 2019. As a result, all LRQA-issued CE mark certifications, unless earlier transferred to a new Notified Body, would lapse as of such date. Prior to receipt of such notice, we had begun transitioning our CE mark certifications to a new Notified Body, TUV SUD. However, TUV SUD was unable to complete all work necessary to reissue our CE mark certifications by September 30, 2019. Under the MDD, only product placed on the European market at our European subsidiary prior to September 30, 2019 is eligible for sale to EU countries. As a result, prior to September 30, 2019, we manufactured and shipped inventory in amounts that for most products we believe would be sufficient to supply our EU customers while we await reissuance of the CE mark certifications by TUV SUD. CE mark certifications were reissued in February 2020 for many of our products. For some products for which CE marks have not yet been reissued, we expect to continue selling product from our inventory reserves already placed on the market in the EU prior to September 30, 2019. However, we do not expect reissuance of our CE mark certifications 1) for XenoSure or AlboGraft until Q2 2020, 2) for Anastoclip AC closure systems, Anastoclip GC closure systems, Flexcel carotid shunts, and LifeSpan ePTFE vascular grafts until Q4 2020 and 3) for AlboSure vascular patches until Q4 2021. We expect that the inventory of such products held by our European subsidiary will start to go into backorder in Q1 2020.

In April 2017, the EU adopted new regulations for medical devices (MDR), which replace the MDD and apply after a three year transition period. Our products will be subject to the MDR, which require all of our products, regardless of classification, to obtain a new CE mark in accordance with the new, more stringent standards under the MDR. For example, as a condition to CE mark approval, clinical evidence from clinical investigations will be required for most Class III and implantable devices. As our Notified Bodies begin to transition from MDD to MDR, they have begun to impose more rigorous requirements on us in order to obtain approval to renew the CE marks on certain of our products. If we fail to obtain the CE marks on our products under the MDR in a timely manner, or at all, future sales of our products could be impacted.

The United Kingdom (U.K.) left the EU on January 31, 2020, which is commonly referred to as “Brexit”. Pursuant to the formal withdrawal arrangements agreed between the U.K. and the EU, the U.K. will be subject to a transition period until December 31, 2020. During this time, we must register and fulfill new regulatory requirements for continued sales of products in the U.K. beginning on January 1, 2021. If our efforts to obtain new regulatory approval in the U.K. is materially delayed or denied, we may be required to incur additional expenses in order to develop, manufacture and commercialize our product candidates in the EU and our future sales may be impacted. We opened our Hereford, England office in 2019 largely in response to Brexit.

In the event that any of our products proves to be defective, we can voluntarily recall, or the FDA or foreign equivalent could require us to implement a recall of, any of our products and, if someone is harmed by a malfunction or a product defect, we may experience product liability claims for such defects. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, will require the dedication of our time and capital and may harm our reputation and financial results. Future recalls or claims could also result in significant costs to us and significant adverse publicity, which could harm our ability to market our products in the future.

In some cases, we rely on our non-U.S. distributors or third party agents to obtain premarket approvals, complete product registrations, comply with clinical trial requirements, and complete those steps that are customarily taken in the applicable jurisdictions to comply with governmental and quasi-governmental regulation. In the future, we expect to continue to rely on distributors and agents in this manner where appropriate.

Canada regulates the import and sale of medical devices through Health Canada (HC). HC classifies medical devices into four classifications, with Class I being the lowest risk and Class IV being the highest. Class I and II devices are often cleared for sale after they are CE marked or listed on the company’s ISO certification and filed via fax-back applications. Higher classification risk devices (Class III and IV) require filing dossiers that resemble US 510(k) applications. These applications can range in cost and typically take longer for approval. As a holder of Canadian device licenses, we are subject to inspection by HC at our Canadian office. Our Canadian office was most recently inspected in August 2017, the results of which were satisfactory.

In Japan, the Ministry of Health, Labor and Welfare (MHLW) regulates medical devices through the Pharmaceutical Affairs Law, which was reformed effective April 1, 2005. The revisions to Japan’s regulations have resulted in longer lead times for product registration. As a holder of Japanese device licenses, we are also subject to inspection by several Japanese authorities including Japan’s Pharmaceutical and Medical Device Agency (PMDA), Tokyo Metropolitan Government (TMG), and third parties such as Japan’s Electrical Safety & Environmental Technologies Laboratories (JET). Our Japanese office was most recently inspected by JET in February 2019, the results of which were satisfactory.

Australia regulates the import and sale of medical devices through the Therapeutic Goods Administration (TGA). The TGA has built its regulatory framework around requirements similar to those issued in Europe. As such, many medical devices (those with a lower risk profile) may gain relatively fast marketing clearance using their existing EU-issued CE marking. Higher risk devices (those in EU/Aus Class III) must go through a full design review which can be costly and take longer to complete. Issued licenses for medical devices do not require renewal, but do require an annual fee to remain active in the TGA registry of devices. As a holder of Australian device licenses, we are also subject to inspection by TGA in both Australia and the United States. Our North Melbourne facility was most recently inspected by TGA in December 2018, and our Burlington facility was inspected in March 2019, the results of which were satisfactory. Australia requires all foreign manufacturers to have an in country ‘sponsor’ who must have a licensed business inside of Australia. Our licenses are managed on our behalf by our sponsor, Emergo Group.

In China, the National Medical Products Administration (NMPA) regulates and must approve all medical devices to be marketed and sold in China. China has a three-class risk classification system, with Class I being the lowest risk and Class III being the highest risk. Home country approval, such as 510(k) or PMA clearance, is required as a prerequisite to any application. Additionally, the NMPA often tests finished devices at its own testing laboratory to confirm each device’s specifications. The approval process is typically lengthy and usually requires clinical trials. NMPA licenses are valid for five years from date of issuance and require renewal prior to expiration. As a holder of Chinese device licenses, we are subject to inspection by NMPA in both China and the United States. Our China facility was most recently inspected by NMPA in August 2018, the results of which were satisfactory. The NMPA requires all companies located outside of China to appoint a legal entity who maintains a registered business inside of China as the license holder. After the formation of our Chinese subsidiary in 2015, we transferred our licenses from our third-party license holders to our subsidiary.

There can be no assurance that new laws or regulations or new interpretations of laws and regulations regarding the release or sale of medical devices will not delay or prevent sale of our current or future products.

Third-Party Reimbursement

United States

Healthcare providers that purchase medical devices generally rely on third-party payors, including 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 those 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. For example, Medicare reimbursement policies favor outpatient treatment. Furthermore, payments from Medicare, Medicaid, and other third-party payors are subject to legislative and regulatory changes and are susceptible to budgetary pressures.

In the United States, third-party payors generally pay healthcare providers directly for the procedures they perform and in certain instances for the products they use. Our sales volumes depend on the extent to which third-party payors cover our products and the procedures in which they are used. In general, a third-party payor only covers a medical product or procedure when the plan administrator is satisfied that the product or procedure is medically necessary because it improves health outcomes, including quality of life or functional ability, in a safe and cost-effective manner. Even if a device has received clearance or approval for marketing by the FDA, there is no assurance that third-party payors will cover the cost of the device and related procedures in which the device is used.

In many instances, third-party payors cover the procedures performed using our products using price fee schedules that do not vary reimbursement to reflect the cost of the products and equipment used in performing those procedures. In other instances, payment or reimbursement is separately available for the products and equipment used, in addition to payment or reimbursement for the procedure itself. Even if coverage is available, third-party payors may place restrictions on the circumstances in which they provide coverage or may offer reimbursement that is not sufficient to cover the cost of our products. Many of the products that compete with ours are less expensive. Therefore, although coverage may be available for our products and the related procedures, the levels of approved coverage may not be sufficient to justify using our products instead of those of competitors.

In addition, many third-party payors are moving to managed care systems in which providers contract to provide comprehensive healthcare for a fixed cost per person rather than the traditional fee for service model. Managed care providers often attempt to control the cost of healthcare by authorizing fewer elective surgical procedures. Under current prospective payment systems, such as the diagnosis-related group system and the hospital out-patient prospective payment system, both of which are used by Medicare and in many managed care systems used by private third party payors, the reimbursement for our products will be incorporated into the overall reimbursement of a procedure, and there will be no separate reimbursement for our products. As a result, we cannot be certain that hospital administrators and physicians will purchase our products.

If hospitals and physicians cannot obtain adequate reimbursement for our products or the procedures in which they are used, our business, financial condition, and results of operations could suffer a material adverse impact.

Non-U.S.

Our success in non-U.S. markets will depend largely upon the availability of reimbursement from the third-party payors through which healthcare providers are paid in those markets. Reimbursement and healthcare payment systems in non-U.S. markets vary significantly by country. The main types of healthcare payment systems are government sponsored healthcare and private insurance. As in the United States, reimbursement is subject to legislative and regulatory changes and is susceptible to budgetary pressures. Reimbursement approval must be obtained individually in each country in which our products are marketed. Outside the United States, we may pursue reimbursement approval in those countries in which we sell directly to the hospital. In other markets, we generally rely on the distributors who sell our products to obtain reimbursement approval in those countries in which they will sell our products. There can be no assurance that reimbursement approval will be received.

Fraud and Abuse Laws

We may directly or indirectly be subject to various federal and state laws pertaining to healthcare fraud and abuse, including anti-kickback laws. In particular, the federal healthcare program Anti-Kickback Statute prohibits persons from knowingly and willfully soliciting, offering, receiving, or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual, or the furnishing, arranging for, or recommending a good or service for which payment may be made in whole or part under federal healthcare programs, such as the Medicare and Medicaid programs. Penalties for violations include criminal penalties and civil sanctions such as fines, imprisonment, and possible exclusion from Medicare, Medicaid, and other federal healthcare programs. The Anti-Kickback Statute is broad and prohibits many arrangements and practices that are lawful in businesses outside of the healthcare industry. In implementing the statute, the Office of Inspector General, or OIG, has issued a series of regulations, known as the "safe harbors." These safe harbors set forth provisions that, if all their applicable requirements are met, will assure healthcare providers and other parties that they will not be prosecuted under the Anti-Kickback Statute. The failure of a transaction or arrangement to fit precisely within one or more safe harbors does not necessarily mean that it is illegal or that prosecution will be pursued. However, conduct and business arrangements that do not fully satisfy each applicable element of a safe harbor may result in increased scrutiny by government enforcement authorities, such as the OIG.

Patient Protection and Affordable Care Act

In March 2010, significant reforms to the U.S. healthcare system were adopted in the form of the Patient Protection and Affordable Care Act (the PPACA). Under the PPACA we are subject to the Physician Payments Sunshine Act, which was enacted as part of the PPACA and requires detailed public disclosure of certain payments and "transfers of value" from us to healthcare professionals, such as the payment of royalties, compensation for services provided such as training, consulting, and reimbursement for travel and meal expenses. Certain states also require us to disclose similar information or even prohibit some forms of these payments.

Employees

We had 479 employees, including 454 full-time employees, at December 31, 2019.

Customers

Our sales are not dependent on any single customer or distributor, and we continue to expand our distribution channel worldwide through direct sales representatives and independent distributors. No single customer accounted for more than 2% of our net sales in 2019.

Corporate Information

We were incorporated in Massachusetts on November 28, 1983, as Vascutech, Inc. On June 16, 1998, we were reincorporated in Delaware, and on April 6, 2001, we changed our name to LeMaitre Vascular, Inc. On October 19, 2006, we executed our initial public offering, and our common stock trades on The Nasdaq Global Market under the symbol "LMAT." Our principal executive offices are located at 63 Second Avenue, Burlington, Massachusetts 01803, and our telephone number is (781) 221-2266. Our website address is www.lemaitre.com.

Where You Can Find More Information

Our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 are available through the investor relations portion of our website (www.lemaitre.com) free of charge as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, (SEC). The address of the SEC's website is www.sec.gov. Information on our investor relations page and on our website is not part of this Annual Report on Form 10-K or any of our other securities filings unless specifically incorporated herein or therein by reference, and you should not consider any information contained in, or that can be accessed through, our website as part of this Annual Report on Form 10-K. The SEC maintains an internet site that contains reports, proxy and information statements and other information. All statements made in any of our securities filings, including all forward-looking statements or information, are made as of the date of the document in which the statement is included, and we do not assume or undertake any obligation to update any of those statements or documents unless we are required to do so by law. In addition, our Corporate Governance Guidelines, Code of Business Conduct and Ethics and Charters of our Audit, Compensation and Nominating and Corporate Governance Committees are available on our website and are available in print to any stockholder who requests such information.

Item 1A. Risk Factors

Investing in our securities involves a high degree of risk. You should consider carefully the following information about the risks described below, together with the other information contained in this Annual Report on Form 10-K and in our other public filings in evaluating our business. The following important factors, among others, could cause our actual operating results to differ materially from those indicated or suggested by forward-looking statements made in this Annual Report on Form 10-K or presented elsewhere by management from time to time. Investors should carefully consider the risks described below before making an investment decision. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are not material may also significantly impair our business operations. Our business could be harmed by any of these risks. The trading price of our common stock could decline due to any of these risks, and investors may lose all or part of their investment.

Risks Related to Our Business

If we do not comply with foreign regulatory requirements to market our products outside the United States, our business will be harmed.

Sales of medical devices outside the United States are subject to international regulatory requirements that vary from country to country. These requirements and the amount of time required for approval may differ from our experiences with the FDA in the United States. In some cases, we rely on our international distributors to obtain premarket approvals, complete product registrations, comply with clinical trial requirements, and complete those steps that are customarily taken in the applicable jurisdictions to comply with governmental and quasi-governmental regulation. In the future, we expect to continue to rely on distributors in this manner in those countries where we continue to market and sell our products through them. Failure to satisfy these foreign regulations would impact our ability to sell our products in these countries and could cause our business to suffer. There can be no assurance that we will be able to obtain or maintain the required regulatory approvals in these countries.

Our products are regulated in the European Union (EU) under the European Medical Devices Directive (93/42/EC as amended by 2007/47/EC) (MDD). In order to market our medical devices in the EU, we are required to obtain CE mark certifications, which denote conformity to the essential requirements of the MDD, and manufacturers of higher-risk devices generally must use a “Notified Body”—an appointed independent third party to assess conformity. We have received CE mark certifications to sell nearly all of our products, though currently there is a lapse in our CE mark certifications for some of our products due to one of our Notified Bodies abandoning all services related to the MDD. On June 13, 2019, the Notified Body that issued the majority of our CE mark certifications, Lloyd's Register Quality Assurance or LRQA, notified its clients that it would cease providing all Notified Body services relating to the MDD to all clients, including us, as of September 12, 2019, which date was subsequently extended to September 30, 2019. As a result, all LRQA-issued CE mark certifications, unless earlier transferred to a new Notified Body, would lapse as of such date. Prior to receipt of such notice, we had begun transitioning our CE mark certifications to a new Notified Body, TUV SUD. However, TUV SUD was unable to complete all work necessary to reissue our CE mark certifications by September 30, 2019. Under the MDD, only product placed on the European market at our European subsidiary prior to September 30, 2019 is eligible for sale to EU countries. As a result, prior to September 30, 2019, we manufactured and shipped inventory in amounts that for most products we believe would be sufficient to supply our EU customers while we await reissuance of the CE mark certifications by TUV SUD. CE mark certifications were reissued in February 2020 for many of our products. For some products for which CE marks have not yet been reissued, we expect to continue selling product from our inventory reserves already placed on the market in the EU prior to September 30, 2019. However, we do not expect reissuance of our CE mark certifications 1) for XenoSure or AlboGraft until Q2 2020, 2) for Anastoclip AC closure systems, Anastoclip GC closure systems, Flexcel carotid shunts and LifeSpan ePTFE vascular grafts until Q4 2020 and 3) for AlboSure vascular patches until Q4 2021. We have started to experience backorders related to the inventory of such products held by our European subsidiary. If the reissuance of our CE marks for any of our products is materially delayed or withheld, our revenues could be further impacted due to our saleable inventory reserves becoming depleted and our business could be harmed.

Additionally, the CE mark for our Omniflow II graft will lapse due to the delays in the ability of our Notified Body for this product, TUV Rheinland, to review our manufacturing site change application from North Melbourne, Australia to Burlington, Massachusetts. This delay will also subject Omniflow II to an MDR application process earlier than we expected. This will result in a lapse in the CE mark certification for Omniflow II from June 2020 until we receive the CE mark certification of Omniflow II, which we expect to occur by Q3 2021. We expect that the inventory of the majority of such products held by our European subsidiary will only be sufficient to supply our customers until Q3 2021, based on historical sales, and as a result, we may go into backorder for such products until the CE mark is issued. If the CE mark certification for Omniflow II is materially delayed or withheld, our European revenues could be impacted due to our saleable inventory reserves becoming depleted and our business could be harmed.

In April 2017, the EU adopted new regulations for medical devices (MDR), which replace the MDD and apply after a three year transition period. Our products will be subject to the MDR, which require all of our products, regardless of classification, to obtain a new CE mark in accordance with the new, more stringent standards under the MDR. As a condition to CE mark approval, clinical evidence from clinical investigations will be required for Class III and implantable devices. As our Notified Bodies start to transition from MDD to MDR, they have begun to impose more rigorous requirements on us in order to obtain approval to renew the CE marks on certain of our products. For example, we have been informed by BSI, our Notified Body for the product lines manufactured in our Saint-Etienne, France facility, that they require more clinical data for three of the four product lines for the continuance of the CE mark certifications and the upcoming MDR certifications for such devices. If we fail to obtain sufficient clinical data for these products, our current CE marks may be suspended or not issued in a timely manner or at all, and future sales of those products could be adversely impacted. Additionally, if we fail to obtain new CE marks on these products or our other products under the MDR in a timely manner, or at all, future sales of our products in the EU could be adversely impacted.

There can be no assurance that we will be able to obtain or maintain CE marks for our existing products, and obtaining CE marks may involve a significant amount of time and expense, stringent clinical and preclinical testing, or modification of our products and could result in limitations being placed on the use of our products in order to obtain approval. If we fail to obtain new CE marks on our products in a timely manner, or at all, future sales of our products could be adversely impacted.

Maintaining a CE mark is contingent upon our continued compliance with applicable European medical device requirements, including limitations on advertising and promotion of medical devices and requirements governing the handling of adverse events. As illuminated above, there can be no assurance that we will be successful in maintaining the CE mark for any of our current products. In particular, adverse event reporting requirements in the EU mandate that we report incidents which led or could have led to death or serious deterioration in health. Under certain circumstances, we could be required to or could voluntarily initiate a recall or removal of our product from the market in order to address product deficiencies or malfunctions. Any recall of our products may harm our reputation with customers and divert managerial and financial resources.

Failure to receive or maintain approval would prohibit us from selling these products in member countries of the EU, and would require significant delays in obtaining individual country approvals. If we do not receive or maintain these approvals, our business could be harmed.

Our facilities are subject to periodic inspection by numerous regulatory authorities, including governmental agencies and Notified Bodies, and we must demonstrate compliance with their applicable medical devices regulations. Our most recent inspections were as follows:

Facility	Agency	Jurisdiction	Date
Burlington	U.S. FDA	United States	August 2017
Vaughan	Health Canada	Canada	August 2017
North Melbourne	Therapeutic Goods Administration (TGA)	Australia	September 2017
North Melbourne	Brazil (ANVISA)	Brazil	October 2017
Fox River Grove	AATB	Worldwide	January 2018
Fox River Grove	U.S. FDA	United States	January 2018
Burlington	Notified Body (LRQA)	Europe	January 2018
North Melbourne	Notified Body (TUV Rheinland)	Europe	January 2018
Shanghai	China FDA (NMPA)	China	August 2018
Burlington	Notified Body (LRQA)	United States Medical Device Single Audit Program	October 2018
Burlington	Notified Body (LRQA)	Europe	November 2018
North Melbourne	Notified Body (TUV Rheinland)	Europe	November 2018
North Melbourne	Therapeutic Goods Administration (TGA)	Australia	December 2018
Burlington	Notified Body (LRQA)	Europe	December 2018
Burlington	Korean FDA	Korea	January 2019
Saint-Etienne	Notified Body (BSI)	Europe	January 2019
Tokyo	Notified Body (JET)	Japan	February 2019
Burlington	Therapeutic Goods Administration (TGA)	Australia	March 2019
Saint-Etienne	Notified Body (BSI)	Europe	March 2019
Burlington	Notified Body (LRQA)	United States Medical Device Single Audit Program	March 2019
North Melbourne	Notified Body (TUV Rheinland)	Europe	June 2019
Saint-Etienne	Notified Body (BSI)	Europe	October 2019

Any failure by us to comply with regulatory requirements in this regard may entail our taking corrective action, such as modification of our policies and procedures. In addition, we may be required to cease all or part of our operations for some period of time until we can demonstrate that appropriate steps have been taken. There can be no assurance that we will be found in compliance with such standards in future audits.

We also pursue registrations in other jurisdictions in which we sell our devices directly, such as Japan and China. In 2015, the China Food and Drug Administration (NMPA) significantly increased the application fees for product registrations and imposed additional requirements for obtaining product approval, which includes requirements for conducting clinical trials to support the registration application process on newly introduced products in China. As a result, we may not seek registration for certain products where the cost is not justified. Any delay in product registrations could have a negative impact on our results of operations.

We may experience significant fluctuations in our quarterly and annual results.

Fluctuations in our quarterly and annual financial results have resulted and will continue to result from numerous factors, including:

- changes in demand for the products and services we sell;
- the acceleration or deceleration of growth rates of our products, particularly in the case of biologic vascular patches whose growth rate has declined over recent periods;
- increased product and price competition, due to market conditions, the regulatory landscape or other factors;
- changes in the mix of products and services we sell;
- our pricing strategy with respect to different product lines and services;
- strategic actions by us, such as acquisitions of businesses, products, or technologies;
- effects of domestic and foreign economic conditions and exchange rates on our industry and/or customers;
- the divestiture or discontinuation of a product line or other revenue generating activity;
- the relocation and integration of manufacturing or processing operations and other strategic restructuring;
- regulatory actions that may necessitate recalls of our products or warning letters that negatively affect the markets for our products;
- changes to the regulatory status of our products, including suspension or cancellation of licenses or CE marking;
- changes in foreign political relations that add additional barriers to entry;
- our determination whether or not to continue the payment of quarterly cash dividends, and/or the amount and frequency at which to increase them;
- costs incurred by us in connection with the termination of contractual and other relationships, including those of distributors or agents;
- our ability to collect outstanding accounts receivable in selected countries outside of the United States;
- changes in tax laws in the jurisdictions in which we do business;

- the expiration, elimination or utilization of deferred tax assets such as net operating loss carry-forwards;
- market reception of our new or improved product and service offerings; and
- the loss of any significant customer, especially in regard to any product or service that has a limited customer base.

These factors, some of which are not within our control, may cause the price of our common stock to fluctuate substantially. If our quarterly operating results fail to meet or exceed the expectations of securities analysts or investors, our stock price could drop suddenly and significantly. We believe the quarterly comparisons of our financial results are not always meaningful and should not be relied upon as the sole indicator of our future performance.

If we are unable to expand our product and service offerings, we may not achieve our growth objectives and our results of operations could suffer.

The treatment of peripheral vascular and cardiovascular disease includes both open vascular surgery and minimally invasive endovascular procedures, and many of our products are used primarily or exclusively in open surgery procedures. We market and sell our products primarily to vascular surgeons, and the majority of our marketing efforts and sales relate to products used in open vascular surgery rather than in endovascular procedures. We estimate that in 2019, over 90% of our net sales were from devices used primarily in open surgery.

We may not be able to compete effectively with our competitors unless we can keep pace with existing or new products, services and technologies in the vascular device market and the minimally invasive endovascular procedure segment, in particular. Our success in developing and commercializing new products and new versions of our existing products and services is affected by our ability to:

- recognize in a timely manner new market trends and customer needs;
- identify products or services that address those trends or needs;
- obtain regulatory clearance or approval of new products and technologies;
- successfully develop cost-effective manufacturing processes for such products;
- commercially introduce such products, services and technologies; and
- achieve market acceptance.

If we are unable to expand our product or service offerings, we may not achieve our growth objectives and our results of operations as well as our stock price could suffer.

We may not maintain our recent levels of profitability.

There can be no assurance we will continue to achieve net sales growth and/or profit growth in the future. If, for example, we are unable to effectively manage our operating expenses due to, for example, additional CE mark expenses, or increased headcount, we may need to reduce our operating expenses through cost-cutting in order to maintain or improve operating profitability. Decreased investment levels may inhibit future growth in net sales and earnings.

Additionally, our ability to maintain and increase profitability will be influenced by many factors, including:

- the level and timing of future sales, manufacturing costs and operating expenses;
- our ability to restrain or reduce operating expenses through cost-cutting measures;
- market acceptance of our new products and services;
- the productivity of our direct sales force and distributors;
- fluctuations in foreign currency exchange rates;
- our ability to successfully build direct sales organizations in new markets;
- our ability to successfully acquire and develop competitive products;
- our ability to successfully integrate acquired businesses, products, services or technologies;
- the impact on our business of competing products, technologies, and procedures;

- our ability to obtain or maintain regulatory approvals for our products in new and existing markets;
- the reimbursement rates for the medical procedures in which our products are used;
- the cost of litigation, if any; and
- changes in tax laws.

We may acquire businesses and assets in the future. We may experience difficulties in completing the integration of these acquisitions into our business, or we may not realize the anticipated benefits of these acquisitions.

In order to expand our product offerings, we have completed 23 acquisitions, and a key part of our strategy is to acquire additional businesses, products, or technologies in the future. Our growth strategy depends, in part, upon our ability to identify, negotiate, complete, and integrate suitable acquisitions. If we are unable to complete acquisitions on satisfactory terms or at all, our growth objectives and sales could be negatively affected.

Even if we complete acquisitions, we may experience:

- difficulties in integrating any acquired businesses, personnel, and products into our existing business;
- difficulties or delays in integrating manufacturing operations into our existing business or successfully replicating manufacturing processes at new manufacturing facilities on a cost-effective basis;
- degradation in our corporate gross margin due to lower margins associated with our acquired devices;
- the sudden reduction in volume or loss of orders from a key customer, particularly where the acquired company had concentrated sales;
- diversion of our management’s time and attention from other business concerns;
- higher costs of integration than we anticipated;
- unknown or unanticipated liabilities included as part of the acquisition;
- disputes or litigation with former owners related to contingent payments, liabilities assumed or not assumed or other matters;
- challenges in complying with new regulatory requirements to which we were not previously subject;
- increased regulatory scrutiny;
- challenges in maintaining or obtaining regulatory approvals for acquired products;
- difficulties in retaining key employees of the acquired business who are necessary to manage these acquisitions;
- difficulties if the acquired company is remote or inconvenient to our Burlington, Massachusetts, headquarters, such as the operations we acquired in 2014 in North Melbourne, Australia and in 2018 in Saint-Etienne, France;
- difficulties or delays in transitioning clinical studies or unfavorable results from such clinical studies;
- loss of key suppliers or issues with the ongoing supply of the acquired product from its former owners;
- charges related to the acquisition of in-process research and development;
- dilution as a result of equity financing required to fund acquisition costs; or
- debt, as a result of debt financing required to fund acquisitions, which would be senior to our common stock, would require interest payments to a lender, and could restrict our ability to pay dividends to our shareholders.

We could also discover deficiencies withheld from us due to fraud or otherwise not uncovered in our due diligence prior to an acquisition, including but not limited to deficiencies in internal controls, data adequacy and integrity, product quality, and regulatory compliance, as well as undisclosed contractual or other liabilities and product liabilities, any of which could result in us becoming subject to penalties or other liabilities. Any of these difficulties could negatively impact our ability to realize the intended and anticipated benefits that we currently expect from our acquisitions or from acquisitions we complete in the future, and could harm our financial condition and results of operations.

We also acquired the processing, preservation and distribution operations of RestoreFlow allografts located in Fox Rover Grove, Illinois. See "Our tissue processing and preservation services are subject to a variety of risks, including those related to the procurement of human tissue and regulatory requirements" below for risks associated with our tissue processing and preservation services.

For any of these reasons or as a result of other factors, we may not realize the anticipated benefits of our acquisitions and our operating results may be harmed.

Our call point focus on the vascular surgeon with a product portfolio largely used in open surgical procedures may be too narrow, which may adversely affect our future sales.

The treatment of peripheral vascular disease continues to shift from open vascular surgery to minimally invasive endovascular procedures. We market and sell our products primarily to vascular surgeons, and the majority of our marketing efforts and sales relate to products used in open vascular surgery rather than in endovascular procedures. We estimate that in 2019, over 90% of our net sales were from devices used in open vascular procedures.

In addition to performing traditional open surgical procedures, vascular surgeons in growing numbers also perform minimally invasive, image-guided interventional procedures for peripheral vascular disease. However, vascular surgeons may not adopt these procedures in the numbers we expect and instead these procedures may be largely performed by interventional cardiologists and interventional radiologists. Many of our competitors have focused their sales efforts on these interventionalists. If interventional cardiologists and interventional radiologists perform a greater percentage of these new procedures than we expect, our net sales may decline.

Moreover, demographic trends and other factors, such as reimbursement rates, are also driving vascular surgeons in the United States and potentially in other markets to increasingly specialize in certain kinds of procedures, such as the creation and maintenance of dialysis access sites and endovascular therapies. Vascular surgeon training programs may focus on those therapies to the exclusion of open vascular procedures. If there is a decline in vascular surgeons training in open vascular procedures in favor of training in minimally invasive endovascular procedures, this could limit the number of vascular surgeons using our products due to lack skills in open vascular procedures. Further, even those physicians trained in open procedures may discontinue performing them if there is a lack of demand. If this trend continues, it could lead to the fragmentation of our customer base, which would reduce cross-selling opportunities and the efficiency of each sales call by our sales representatives, which in turn could negatively impact our business.

CardioCel is sold to a different call point from that of most of our product lines, and we may not be successful in selling to that call point.

Historically, the majority of sales of CardioCel have been to pediatric cardiac surgeons, a call point that is different from our main call point focus. We market and sell our products primarily to vascular surgeons, and the majority of our marketing efforts and sales relate to products used in open vascular surgery. As a result, our sales representatives make sales calls predominantly to vascular surgeons and to a lesser extent, cardiac and neuro surgeons. Our success in selling CardioCel will depend, in part, on our sales representatives devoting a portion of their time to making sales calls to, and establishing relationships with, pediatric cardiac surgeons. If they do not undertake these activities or are unsuccessful in doing so, then this could lead to the loss of sales and customers of CardioCel, and our financial condition or results of operations could be harmed. Most of our product lines are used in vascular procedures and as a result, our sales representatives can cross-sell a significant portion of our product portfolio to vascular surgeons. Cross-selling opportunities to pediatric cardiac surgeons will be limited. Additionally, if our sales representatives spend less time focused on sales of our other product lines to vascular surgeons, the sales of those products could decrease, and our financial condition or results of operations could be harmed.

Our tissue processing and preservation services are subject to a variety of risks, including those related to the procurement of human tissue and regulatory requirements.

In November 2016, we acquired the processing, preservation and distribution operations for the RestoreFlow allograft. Prior to the acquisition, we did not provide any human tissue services. Our ability to successfully provide such services may be affected by the following:

- maintenance of quality standards and controls to mitigate the risk that processed tissue cannot be sterilized;

- compliance with regulatory and legal requirements specific to human tissue, with which we were previously unfamiliar, or changes in those requirements;
- maintenance of our AATB accreditation, FDA establishment registration and state licensures;
- the degree to which our tissue procurement organizations are successful in procuring the gift of tissue donation;
- procurement from tissue procurement organizations of adequate amounts of human tissue of a type and quality that meets our specifications, particularly as we may compete for these tissues with organizations who may have greater resources than us;
- processing human tissue in a cost effective manner;
- controlling turnover in a workforce skilled in tissue processing and cryopreservation and any subsequent delay necessary for the adequate training of new personnel; and
- compliance of our tissue procurement organizations to current good tissue practices and our own procurement procedures.

Our failure in any one or more of these areas could adversely impact our ability to provide processing, preservation and distribution services related to allografts and therefore our operations.

Our dependence on sole- and limited-source suppliers could hinder our ability to deliver our products and services to our customers on a timely basis or at all and could harm our results of operations.

We rely on sole- and limited-source suppliers for some of our important product components and certain products. For example, our TRIVEX system and associated disposables, as well as components of our EndoRE remote endarterectomy product line, are manufactured for us by third-party suppliers. Additionally, we rely on a sole-source supplier for the ovine material used for our Omniflow II biosynthetic vascular graft.

With respect to our RestoreFlow allografts, we rely on tissue procurement organizations to provide donated tissue to us for processing and cryopreservation. While we have relationships with multiple tissue procurement organizations, we cannot be sure that the supply of suitable human tissue will be available to us at the levels we need, in which case our allografts revenues could be adversely affected.

When we acquire a product line, we often enter into an agreement with the seller of the product line for a period of one to three years for the supply of the acquired product until we can transition manufacturing to our facilities. Those arrangements are always sole source supply arrangements with a supplier that has determined to divest the product it is manufacturing. As a result, the supplier may not allocate sufficient resources to the manufacture of our product in favor of dedicating resources to its remaining business. Additionally, there is significant risk if the supplier does not have the financial means to continue to supply product. For example, in the case of our acquisition of the CardioCel and VascuCel biologic patches, Admedus Ltd and its affiliates have agreed to continue to supply those products to us for up to three years. For the year ended December 31, 2018, Admedus Ltd reported revenue from continuing operations of AU$25.6 million and a loss before income tax from continuing operations of AU$24.7 million, and for the year ended December 31, 2019, Admedus Ltd reported revenue from continuing operations of AU$17.1 million and a loss before income tax from continuing operations of AU$6.2 million. If Admedus fails to meet its obligations under the supply agreement on a timely basis, or at all, then we may experience interruptions in our supply of the acquired products or we may not receive a future supply of the acquired products until we establish our own manufacturing. If we do not have sufficient supply of an acquired product, this could lead to loss of sales, customer dissatisfaction and damage to our reputation, and our financial condition or results of operations could be harmed.

There are relatively few, or in some cases no, alternative, validated sources of supply for these materials and products. We do not always have supply agreements in place with suppliers, instead placing orders on an as-needed basis. At any time, these suppliers could discontinue or become incapable of the manufacture or supply of these materials or products on acceptable terms or otherwise. We do not ordinarily carry a significant inventory of these materials and products. Identifying and qualifying additional or replacement suppliers, if required, may not be accomplished quickly or at all and could involve significant additional costs. Any supply interruption from our suppliers or failure to obtain replacement suppliers would interrupt our ability to manufacture our products and result in production delays and increased costs, and may limit our ability to deliver products to our customers. This could lead to loss of sales and customers, and our financial condition or results of operations could be harmed.

Any disruption in our manufacturing facilities could harm our results of operations.

Our principal worldwide executive, distribution, and manufacturing operations are located in five leased facilities located in Burlington, Massachusetts. We also have manufacturing sites in North Melbourne, Australia and Saint-Etienne, France and a tissue processing preservation and distribution facility in Fox River Grove, Illinois. These facilities and the equipment we use to manufacture our products would be difficult to replace and could require substantial lead-time to repair or replace in the event of a natural or man-made disaster. In such event, we could not shift production or processing to alternate manufacturing facilities, and we would be forced to rely on third-party manufacturers, if available at all. Although we carry insurance for damage to our property and the disruption of our business from casualties, such insurance may not be sufficient to cover all of our potential losses, including potential damage to our reputation, and may not continue to be available to us on acceptable terms, or at all.

We depend on our senior management team and other key sales and technical personnel, and if we are unable to retain them or recruit additional qualified personnel we may not be able to manage our operations and meet our strategic objectives.

We depend on the continued services of our senior management team and other key sales and technical personnel, as well as our ability to continue to attract and retain additional highly qualified personnel. Each of our key employees may terminate his or her employment with us at any time, and the loss of any of our senior management team or key employees could harm our business. Because we compete for such personnel with other companies, academic institutions, government entities, and other organizations, we may not be able to meet our future hiring needs or retain existing personnel on acceptable terms. Any loss or interruption of the services of our key personnel could also significantly reduce our ability to effectively manage our operations and meet our commercial or strategic objectives, because we cannot be sure that we would be able to find an appropriate replacement on a timely basis when the need arises.

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

Our AlboGraft vascular graft, AlboSure vascular patch, Dialine II vascular graft, Wovex vascular graft, XenoSure biologic patch, ProCol vascular graft and CadioCel and VascuCel patch products contain bovine tissue or material derived from bovine sources, our Omniflow II Biosynthetic Vascular Graft contains ovine tissue, and our surgical glue contains porcine gelatin. Products that contain materials derived from animal sources, including food, pharmaceuticals and medical devices, are increasingly 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 bovine 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. Cases of BSE in cattle discovered in Canada and the United States have increased awareness of the issue in North America. Certain regions or countries have issued regulations that require products to be processed from bovine tissue sourced from countries, like Australia or New Zealand, where no cases of BSE have occurred. 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 the transmission of infectious agents. Significant new regulation, or a ban of our products, could impair our current business or our ability to expand our business, and in the case of a ban or suspension, could materially and adversely affect our results of operations.

We face intense competition from other companies, technologies, and alternative medical procedures and we may not be able to compete effectively.

The segments in which we compete are highly competitive, subject to change, and significantly affected by new product introductions and other activities of industry participants. Although no one company competes against us in all of our product lines or services, a number of manufacturers of peripheral vascular devices have substantially greater capital resources, larger customer bases, broader product lines, larger sales forces, greater marketing and management resources, larger research and development staffs, and larger facilities than ours; have established reputations with our target customers; and have developed worldwide distribution channels that are more effective than ours. Our competitors could elect to devote additional resources to the segments in which we currently enjoy less competition. Also, although we currently have leading positions in the segments for some of our products, this is not true for all of our products. From time to time, we have experienced difficulties competing against large companies.

Recent industry consolidation could make the competitive environment more difficult for smaller companies like ours. Our competitors may be companies who are larger than us and who have substantially greater financial, technological, research and development, regulatory, marketing, sales, and personnel resources than we do. Certain of these competitors are able to manufacture at lower costs and may therefore offer comparable products at lower prices. Certain of these competitors may also have greater experience in developing and further improving products, obtaining regulatory approvals, and manufacturing and marketing such products. Certain of these competitors may obtain patent protection or regulatory approval or clearance, or achieve product commercialization, before us, any of which could materially adversely affect us. Further, if the trend towards endovascular procedures versus open vascular procedures continues or accelerates, our competitors may be better poised to take advantage of that trend, since our main product lines are used primarily in open vascular procedures. Because of the size of the vascular disease market opportunity, competitors and potential competitors have dedicated significant resources to aggressively promote their products. Also, new product developments that could compete with us more effectively are likely because the vascular disease market is characterized by extensive research efforts and technological progress. Competitors may develop technologies and products that are safer, more effective, easier to use, less expensive, or more readily accepted than ours. Their products could make our technology and products obsolete or noncompetitive. Our competitors may also be able to achieve more efficient manufacturing and distribution operations than we can. In addition, many of our products face competition from alternative procedures that utilize a different kind of medical device that we do not currently sell. Increased competition could also result in price reductions and loss of market share, any of which could result in lower revenues and reduced gross profits.

If we are unable to increase our selling prices to customers, or if we are required to make price concessions, our rate of net sales growth could be reduced and our operating results could suffer.

In the years ended December 31, 2019, 2018 and 2017, a material portion of our increases in net sales was driven by higher average selling prices to our hospital customers across several of our product lines, particularly with respect to sales of our LeMaitre Valvulotome and with respect to sales occurring in the United States. In the past, we have been able to rely upon our intellectual property position, our well-known brands, and our established reputation to implement price increases. We implemented a significant price increase in 2015 for our LeMaitre Valvulotome, and our ability to implement additional price increases with respect to that product in the future may be limited.

Additionally, we may become unable to implement further increases in the selling prices of our products:

- if healthcare spending is reduced, particularly in the United States, in response to government-enacted healthcare reform, general economic conditions, or the influence of accountable care organizations;
- if the reimbursement rates for the medical procedures in which our products are used are reduced or limited; or
- if competitors introduce lower-priced products of comparable safety and efficacy.

We also expect marketplace changes to increasingly place pressure on medical device pricing as hospitals join group purchasing organizations, integrated delivery networks, managed care organizations and other groups that seek to aggregate purchasing power and as hospitals are given financial incentives to improve quality and reduce costs. Due to pricing pressures, surgeons may even perform alternative procedures in which our products are unnecessary.

If we become unable to raise selling prices, or if we are required to make price concessions, it could reduce our rate of net sales growth and harm our operating results.

The risks inherent in operating internationally and the risks of selling and shipping our products and of purchasing our components and products internationally may adversely impact our net sales, results of operations, and financial condition.

We derive a significant portion of our net sales from operations in markets outside of the United States. For the year ended December 31, 2019, 46% of our net sales were derived from operations outside of the United States. Our international sales operations expose us and our representatives, agents, and distributors to risks inherent in operating in foreign jurisdictions. These risks include:

- fluctuations in foreign currency exchange rates;
- the imposition of additional U.S. and foreign governmental controls or regulations, including export licensing requirements, duties and tariffs, and other trade restrictions, whether due to, or in reaction to, changes in U.S. trade policy;
- the risk of non-compliance with the Foreign Corrupt Practices Act by our sales representatives or our distributors;
- changing medical device regulations that may impede our ability to register our products in a jurisdiction;
- the imposition of U.S. and/or international sanctions against a country, company, person, or entity with whom we do business that would restrict or prohibit continued business with the sanctioned country, company, person, or entity, whether due to, or in reaction to, changes in U.S. foreign policy;
- a shortage of high-quality sales personnel and distributors;

- loss of any key personnel who possess proprietary knowledge, or who are otherwise important to our success in certain international markets;
- changes in third-party reimbursement policies that may require some of the patients who receive our products to directly absorb medical costs or that may necessitate the reduction of the selling prices of our products;
- the imposition of restrictions on the activities of foreign agents, representatives, and distributors;
- scrutiny of foreign tax authorities, which could result in significant fines, penalties, and additional taxes being imposed on us;
- pricing pressure that we may experience internationally;
- laws and business practices favoring local companies;
- longer payment cycles;
- difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- difficulties in enforcing or defending intellectual property rights;
- exposure to different legal and political standards; and
- political, economic, and/or social instability.

We cannot assure you that one or more of these factors will not harm our business. Any material decrease in our international sales would adversely impact our net sales, results of operations, and financial condition.

Outbreaks of pandemic diseases, such as the novel coronavirus, Covid-19, could cause disruptions in our business.

In addition to the above risks related to our international operations, we also face risks related to disease outbreaks, such as the recent outbreak of Covid-19, first identified in Wuhan, Hubei Province, China. An outbreak of a contagious disease, particularly to extent it becomes pandemic, could significantly disrupt our business operations. The effects of such an outbreak include restrictions on our ability to travel to support our sites in Asia/Pacific Rim and other impacted territories or our customers located there, disruptions in our ability to distribute products, reduced sales of our products in territories where widespread quarantines due to the disease have been imposed, and/or temporary closures of our facilities in Asia/Pacific Rim and other impacted territories. In addition, a significant geographic spread of a pandemic such as Covid-19, an increase in the severity of the outbreak and/or a prolonged duration of the outbreak could adversely affect the global economy, which could result in reduced demand for our products. Any of these events could lead to a loss of sales and harm our financial condition and results of operations.

Legal, political and economic uncertainty surrounding the exit of the U.K. from the EU may be a source of instability in international markets, create significant currency fluctuations, adversely affect our operations in the U.K. and pose additional risks to our business, revenue, financial condition, and results of operations..

Following the result of a referendum in 2016, the U.K. left the EU on January 31, 2020. Pursuant to the formal withdrawal arrangements agreed between the U.K. and the EU, the U.K. will be subject to a transition period under December 31, 2020 (the Transition Period), during which EU rules will continue to apply. Negotiations between the U.K. and the EU are expected to continue in relation to the customs and trading relationship between the U.K. and the EU following the expiry of the Transition Period.

The uncertainty concerning the U.K's legal, political and economic relationship with the EU after the Transition Period may be a source of instability in the international markets, create significant currency fluctuations, and/or otherwise adversely affect trading agreements or similar cross-border co-operation arrangements (whether economic, tax, fiscal, legal, regulatory or otherwise).

These developments, or the perception that any of them could occur, have had, and may continue to have, a significant adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and limit the ability of key market participants to operate in certain financial markets. In particular, it could also lead to a period of considerable uncertainty in relation to the U.K. financial and banking markets, as well as on the regulatory process in Europe. Asset valuations, currency exchange rates and credit ratings may also be subject to increased market volatility.

If the U.K. and the EU are unable to negotiate acceptable trading and customs terms or if other EU Member States pursue withdrawal, barrier-free access between the U.K. and other EU Member States or among the European Economic Area overall could be diminished or eliminated. The long-term effects of Brexit will depend on any agreements (or lack thereof) between the U.K. and the EU and, in particular, any arrangements for the U.K. to retain access to EU markets after the Transition Period.

Such a withdrawal from the EU is unprecedented, and it is unclear how the U.K.'s access to the European single market for goods, capital, services and labor within the EU, or single market, and the wider commercial, legal and regulatory environment, will impact our U.K. operations and customers. We currently ship products to the U.K. from our Sulzbach, Germany location. If Brexit results in greater restrictions on imports and exports between the U.K. and the EU, we may find it necessary to make operational changes to adapt to those restrictions. We may be unable to make such changes in a commercially reasonable or timely manner or at all. Additionally, this could result in higher costs of doing business in the U.K. and possibly the EU. We opened our Hereford, England office in October 2019 principally to help manage these issues.

The use or misuse of our products and tissues we distribute may result in injuries that lead to product liability suits, which could be costly to our business.

If our products or the tissue we process and preserve are defectively designed, manufactured, processed or labeled, contain defective components, or are misused, or if our products or the tissues we process and preserve are found to have caused or contributed to injuries or death, we may become subject to costly litigation by our customers or their patients. Although we offer training for physicians, we do not require that physicians be trained in the use of our products or the tissues we distribute, and physicians may use our products or the tissues we distribute incorrectly or in procedures not contemplated by us. We are from time to time involved in product liability claims. Product liability claims could divert management's attention from our core business, be expensive to defend, and result in sizable damage awards against us. Claims of this nature may also adversely affect our reputation, which could damage our position in the market and subject us to recalls.

We cannot assure you that our product liability insurance coverage will be sufficient to satisfy any claim made against us. Further, we may not be able to maintain the same level of coverage, and we may not be able to obtain adequate coverage at a reasonable cost and on reasonable terms, if at all. Any product liability claim brought against us, with or without merit, could increase our product liability insurance rates or prevent us from securing coverage in the future. Additionally, if any such product liability claim or series of claims is brought against us for uninsured liabilities or is in excess of our insurance coverage, our business could be harmed.

From time to time, we are involved in litigation where the outcome is uncertain and which could entail significant expense.

We are subject, from time to time, to legal proceedings and litigation, including, but not limited to, actions relating to product liability, employment matters, intellectual property, contract disputes and other commercial matters. Because the outcome of litigation is inherently difficult to predict, it is possible that the outcome of litigation, or even simply the defense of litigation, could entail significant cost for us, divert management's time and attention and harm our business. Additionally, we could experience adverse effects of litigation even before finally adjudicated if a counterparty is granted intermediate relief such as an injunction. Even claims without merit could subject us to adverse publicity and require us to incur significant legal fees. The fact that we operate in international markets also increases the risk that we may face legal exposures as we seek to comply with a large number of varying legal and regulatory requirements. If any such proceedings were to result in an unfavorable outcome, it could adversely affect our business, financial condition and results of operations.

If we fail to convert additional countries or products from distributor sales to direct sales, or encounter difficulties in effecting such conversions, our results of operations could suffer.

We have a history of converting international distributor sales to direct-to-hospital sales by buying out our foreign distributor agreements and selling direct-to-hospital through our own direct sales representatives. In the future, we may elect to convert select additional countries and products from distributor sales to direct-to-hospital sales. Such conversions sometimes result in disruptions in our sales in the applicable geographies. These transitions may also have an adverse effect on our cash flow because distributors, unlike direct sales representatives, pay us for inventory that they stock for later sale. In addition, switching to a direct sales force may subject us to longer customer collection times and larger bad debt expense, since we would be required to collect customer payments directly rather than bill and collect from the single distributor.

Our distribution agreements are exclusive, where permissible, with terms of up to five years. These agreements may temporarily constrain our ability to convert certain countries or products from a distributor to a direct-to-hospital model. In order to ensure a successful market transition, we may compensate a distributor in connection with the termination of their distributorship, even where the payment of compensation is not required by contract or local law.

Following termination of any distribution agreement, we may encounter difficulties in transitioning to a direct-to-hospital model. The transition to a direct sales model may require us to meet regulatory requirements that were previously the responsibility of the distributor, which may subject us to additional costs. It also may take us longer than expected to find qualified sales personnel to establish an effective sales force, which could negatively impact projected sales. If a distributor sold our products through a network of sales agents, rather than exclusively through its own personnel, we may not be able to establish relationships with all members of that network, temporarily limiting our access to the existing market. Similarly, failure to maintain or quickly re-establish a distributor's close relationships with the physicians who use our products could reduce sales. Further, it may be difficult or impossible to transfer the assignment of a distributor's rights to sell our products, and as a result, sales to customers may be delayed until a new agreement or approval is obtained. The transition to a direct sales model may also require us to incur additional expenses and may be time-consuming to manage remotely, as is the case with our sales office in China. As a result of these risks, there can be no assurance that we will be successful in transitioning to a direct sales model in the countries that we select, and difficulties that we encounter in these transitions could negatively affect our business.

Fluctuations in the exchange rate of the U.S. dollar and other currencies may adversely impact our results of operations.

Our results of operations are reported in U.S. dollars. While the majority of our revenue is denominated in U.S. dollars, a significant portion of our revenue and costs is denominated in other currencies, such as the Euro, the British pound, the Japanese yen, the Canadian dollar, the Chinese yuan and the Australian dollar. As of December 31, 2019, 46% of our net sales were to customers outside the U.S., largely in currencies other than the U.S. dollar. As a result, we face exposure to movements in currency exchange rates. Our results of operations and our operating expenses are exposed to foreign exchange rate fluctuations as the financial results of those operations are translated from local currency into U.S. dollars upon consolidation. If the U.S. dollar weakens against the local currency, the translation of these foreign currency-based local operations will result in increased net assets, revenue, operating expenses, and net income. Similarly, our local currency-based net assets, revenue, operating expenses, and net income will decrease if the U.S. dollar strengthens against the local currency. Additionally, receivable and payable balances denominated in currencies other than the functional currency may result in gains and losses upon settlement that may adversely impact our results of operations.

Risks Related to the Regulatory Environment

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 and services to healthcare professionals and may compete by discounting the prices of their products and services, 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, civil and criminal penalties, damages, fines, exclusion from participation in federal and state healthcare programs, including Medicare and Medicaid. Although in structuring our sales and marketing practices and customer discount arrangements we strive to comply with those laws and regulations, we cannot assure you 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.

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.

Our business is subject to complex, costly, and burdensome regulations. We could be subject to significant penalties if we fail to comply.

The production and marketing of our products and services and our ongoing research and development are subject to extensive regulation and review by numerous governmental authorities both in the United States and abroad. U.S. and foreign regulations applicable to medical devices and human tissues are wide-ranging and govern, among other things, the testing, marketing, and premarket clearance or approval of new medical devices and services related to human tissues, as applicable, in addition to regulating manufacturing and processing practices, reporting, promotion and advertising, importing and exporting, labeling, and record-keeping procedures.

Our failure to comply with applicable regulatory requirements could result in governmental agencies or a court taking action, including any of the following:

- issuing public warning letters to us;
- imposing fines and penalties on us;
- issuing an injunction preventing us from manufacturing, processing, selling or distributing our products;
- bringing civil or criminal charges against us;
- delaying the introduction of our new products into the market;
- ordering a recall of, or detaining or seizing, our products or cryopreserved human tissue; or
- withdrawing or denying approvals or clearances for our products.

If any or all of the foregoing were to occur, our business, results of operations, and reputation could suffer.

If we are not successful in obtaining and maintaining clearances and approvals from governmental agencies for our medical devices, we will not be able to sell our products, and our future growth will be significantly hampered.

Our products require premarket clearance or approval in the United States and the CE Mark or other approvals in foreign countries where they are sold. Each medical device that we wish to market in the United States generally must receive either 510(k) clearance or approval of a premarket application, or PMA, from the FDA before the product can be marketed or sold. Either process can be lengthy and expensive. The FDA's 510(k) clearance procedure usually takes three to twelve months from the date the FDA receives the application, but may take longer. Although 510(k) clearances have been obtained for nearly all of our current products that require such clearances, the FDA may condition, limit or prohibit our sales of these products if safety or effectiveness problems develop with the devices. Our new products or significantly modified existing products could be denied 510(k) clearance and required to undergo the more burdensome PMA approval process if they are not found to be substantially equivalent.

The PMA approval process is much more costly, lengthy, and uncertain than the premarket notification process. It generally takes from six months to three years from the date the application is submitted to, and filed with, the FDA, and may take longer. Achieving premarket approval typically requires extensive clinical trials and may require the filing of numerous amendments with the FDA over time. The FDA may also require post-approval studies to continue demonstrating the safe and effective performance of these devices. We do not have significant experience in obtaining PMA approval or conducting these studies for our products.

The FDA has previously proposed changes for which FDA clearance to market would possibly require clinical data, more extensive manufacturing information and post market data. As part of the 510(k) reform, the FDA proposes to issue regulations defining grounds and procedures for rescission of 510(k) applications that have previously been cleared to market. Additionally, in April 2018, the FDA announced the Medical Device Safety Action Plan: Protecting Patients, Promoting Public Health in which the FDA has proposed limiting the age of predicate devices used in 510(k) applications, thus narrowing the field of available predicates for comparison in the 510(k) process. The FDA may also require the more extensive PMA process for certain products. Our ability to market our products outside the United States is also subject to regulatory approval, including our ability to demonstrate the safety and effectiveness of our products in the clinical setting. Even if regulatory approval or clearance of a product is granted, the approval or clearance could limit the uses or the claims for which the product may be labeled and promoted, which may limit the market for our products. If we do not obtain and maintain foreign regulatory or FDA approval with respect to our products, as applicable, we will not be able to sell our products, and our future growth will be significantly hampered.

If we or some of our suppliers fail to comply with the FDA's Quality System Regulation and other applicable requirements, our manufacturing or processing operations could be disrupted, our sales and profitability could suffer, and we may become subject to a wide variety of FDA enforcement actions.

We are subject to inspection and marketing surveillance by the FDA to determine our compliance with all regulatory requirements. If the FDA finds that we have failed to comply with any regulatory requirements, it can institute a wide variety of enforcement actions.

We and some of our suppliers must comply with the FDA's Quality System Regulation, which governs the methods used in, and the facilities and controls used for, the design, testing, manufacture, control, quality assurance, installation, servicing, labeling, packaging, storage, and shipping of medical devices. Our Fox River Grove operations must comply with the FDA's current Good Tissue Practices, which are the FDA regulatory requirements for the processing of human tissue. The FDA enforces its regulations through pre-announced and unannounced inspections. We have been, and anticipate in the future being, subject to such inspections by the FDA and other regulatory bodies. The timing and scope of future audits is unknown and it is possible, despite our belief that our quality systems and the operation of our manufacturing facilities will remain in compliance with U.S, and non-U.S. regulatory requirements, that a future audit may result in one or more unsatisfactory results. If we or one of our suppliers fails an inspection, or if a corrective action plan adopted by us or one of our suppliers is not sufficient, the FDA may bring an enforcement action against us, and our operations could be disrupted and our manufacturing delayed.

We are also subject to the FDA's general prohibition against promoting our products for unapproved or off-label uses and to the medical device reporting regulations that require us to report to the FDA if our products may have caused or contributed to a death or serious injury, or if our device malfunctions and a recurrence of the malfunction would likely result in a death or serious injury. We must also file reports with the FDA of some device corrections and removals, and we must adhere to the FDA's rules on labeling and promotion. If we fail to comply with these or other FDA requirements or fail to take adequate corrective action in response to any significant compliance issue raised by the FDA, the FDA can take significant enforcement actions, which could harm our business, results of operations, and our reputation.

In addition, most other countries, such as Japan, require us to comply with manufacturing and quality assurance standards for medical devices that are similar to those in force in the United States before marketing and selling our products in those countries. If we fail to comply, we would lose our ability to market and sell our products in those foreign countries.

Even after our products have received marketing approval or clearance, our products and the tissue we process may be subject to product recalls. Licenses, registrations, approvals and clearances could be withdrawn or suspended due to failure to comply with regulatory standards or the occurrence of unforeseen problems following initial approval.

Our products, services, marketing, sales and development activities, and manufacturing processes are subject to extensive and rigorous regulation by the FDA, by comparable agencies in foreign countries, and by other regulatory agencies and governing bodies. These authorities have been increasing their scrutiny of our industry. If those regulatory bodies feel that we have failed to comply with regulatory standards or if we encounter unforeseen problems following initial approval, licensure or registration, there can be no assurance that any approval, licensure or registration will not be subsequently withdrawn, suspended or conditioned upon extensive post-market study requirements, even after having received marketing approval or clearance or licenses and registrations. Further, due to the increased scrutiny of our industry by the various regulatory agencies and the interconnectedness of the various regulatory agencies, particularly within the EU, there is also no assurance that withdrawal or suspension of any of our approvals, licenses or registrations by any single regulatory agency will not precipitate one or more additional regulatory agencies from also withdrawing or suspending their approval, license or registration.

In the event that any of our products proves to be defective, we can voluntarily recall, or the FDA or foreign equivalent could require us to implement a recall of or prohibit the sale of, any of our products. For example, in 2019 we recalled certain lots of catheters manufactured by Applied Medical due to an issue with premature material degradation. Recalls, whether voluntary or required, could result in significant costs to us and significant adverse publicity, which could harm our ability to market our products in the future.

With respect to our RestoreFlow allografts, we may voluntarily recall tissue, and in the event of non-compliance with the regulations governing human tissue, the FDA may issue a warning letter, order the recall and/or destruction of tissues and/or order the suspension or cessation of processing and preservation of new tissues.

Additionally, if someone is harmed by a malfunction or a product defect, we may experience product liability claims for such defects. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, will require the dedication of our time and capital and may harm our reputation and financial results. Future recalls or claims could also result in significant costs to us and significant adverse publicity, which could harm our ability to market our products in the future.

Domestic and foreign legislative or administrative reforms resulting in restrictive reimbursement practices of third-party payors and cost containment measures could decrease the demand for products purchased by our customers, the prices that our customers are willing to pay for those products and the number of procedures using our devices.

Our products and our tissue preservation services are purchased principally by hospitals or physicians which typically bill various third-party payors, such as governmental programs (e.g., Medicare, Medicaid and comparable foreign programs), private insurance plans and managed care plans, for the healthcare services provided to their patients. The ability of our customers to obtain appropriate reimbursement for products and services from third-party payors is critical to the success of our products and services because it affects which products customers purchase and the prices they are willing to pay. Reimbursement varies by country and can significantly impact the acceptance of new technology. Implementation of healthcare reforms in the United States and in significant overseas markets such as Germany, Japan, France and other countries may limit, reduce or eliminate reimbursement for our products and services and adversely affect both our pricing flexibility and the demand for our products and services. Even when we develop or acquire a promising new product or service, we may find limited demand for the product or service unless reimbursement approval is obtained from private and governmental third-party payors.

Major third-party payors for hospital services in the United States and abroad continue to work to contain healthcare costs through, among other things, the introduction of cost containment incentives and closer scrutiny of healthcare expenditures by both private health insurers and employers. For example, in an effort to decrease costs, certain hospitals and other customers may resterilize our products intended for a single use or purchase reprocessed products from third-party reprocessors in lieu of purchasing new products from us.

Further legislative or administrative reforms to the reimbursement systems in the United States and abroad, or adverse decisions relating to our products by administrators of these systems in coverage or reimbursement, could significantly reduce reimbursement for procedures using our medical devices or result in the denial of coverage for those procedures. Examples of these reforms or adverse decisions include price regulation, competitive pricing, coverage and payment policies, comparative effectiveness of therapies, technology assessments and managed-care arrangements. Any of such reforms or adverse decisions resulting in restrictive reimbursement practices or denials of coverage could have an adverse impact on the acceptance of our products and the prices that our customers are willing to pay for them.

Risks Related to Intellectual Property

If we fail to adequately protect our intellectual property rights, or prevent use of our intellectual property by third parties, we could lose a significant competitive advantage and our business may suffer.

Our success depends in part on obtaining, maintaining, and enforcing our intellectual property rights, trademarks, and other proprietary rights, and our ability to avoid infringing on the proprietary rights of others. We take precautionary steps to protect our technological advantages and intellectual property. We rely upon patent, trade secret, copyright, know-how, and trademark laws, as well as license agreements and contractual provisions, to establish our intellectual property rights and protect our products. These measures may only afford limited protection and may not:

- prevent our competitors from duplicating our products or services;
- prevent our competitors from gaining access to our proprietary information and technology; or
- permit us to gain or maintain a competitive advantage.

The issuance of a patent is not conclusive as to its validity or enforceability. Any patents we have obtained or will obtain in the future might also be invalidated or circumvented by third parties. In addition, any pending patent applications may not issue as patents or, if issued, may not provide commercially meaningful protection, as competitors may be able to design around our patents to produce alternative, non-infringing designs. Should such challenges to our patents be successful, competitors might be able to market products and use manufacturing processes that are substantially similar to ours. Furthermore, patents expire after a certain duration, depending on the jurisdiction in which issued. To the extent any manufacturers are successful in challenging our patents or they enter the market following the expiration of our patents, this could have an adverse impact on our business and harm our sales and operating results.

Additionally, we may not be able to effectively protect our rights in unpatented technology, trade secrets, and confidential information. We have a policy of requiring key employees and consultants and corporate partners with access to trade secrets or other confidential information to execute confidentiality agreements. Our confidentiality agreements also require our employees to assign to us all rights to any inventions made or conceived during their employment with us. We also generally require our consultants to assign to us any inventions made during the course of their engagement by us. There can be no assurance, however, that these agreements will provide meaningful protection or adequate remedies for us in the event of unauthorized use, transfer, or disclosure of confidential information or inventions.

In addition, the laws of foreign countries may not protect our intellectual property rights effectively or to the same extent as the laws of the United States. If our intellectual property rights are not adequately protected, we may not be able to commercialize our technologies, products, or services and our competitors could commercialize similar technologies, which could result in a decrease in our sales and market share.

If third parties claim that we infringe upon their intellectual property rights, we may incur liabilities and costs, and we may have to redesign or discontinue selling the affected product.

The medical device industry is litigious with respect to patents and other intellectual property rights. Companies operating in our industry routinely seek patent protection for their product designs, and many of our principal competitors have large patent portfolios. Companies in the medical device industry have used intellectual property litigation to gain a competitive advantage. Whether a product infringes a patent or other intellectual property rights involves complex legal and factual issues, the determination of which is often uncertain. We face the risk of claims that we have infringed on third parties' intellectual property rights, and we cannot assure you that our products or methods do not infringe the patents or other intellectual property rights of third parties. Our efforts to identify and avoid infringing on third parties' intellectual property rights may not always be successful. Any claims of patent or other intellectual property infringement, even those without merit, could:

- be expensive and time consuming to defend;
- result in us being required to pay significant damages to third parties for past use of the asserted intellectual property;
- harm our reputation;
- cause us to cease making or selling products that incorporate the challenged intellectual property;
- require us to redesign, reengineer, or rebrand our products, which may not be possible and could be costly and time consuming if it is possible to do so at all;
- require us to enter into royalty or licensing agreements in order to obtain the right to use a third party's intellectual property, which agreements may not be available on terms acceptable to us or at all;
- divert the attention of our management and key personnel from other tasks important to the success of our business; or
- result in our customers or potential customers deferring or limiting their purchase or use of the affected products until resolution of the litigation.

It is also possible that a third party could claim that our manufacturing process violates an existing patent or other intellectual property rights. If we were unsuccessful in defending such a claim, we may be forced to stop production at one or more of our manufacturing facilities.

In addition, new patents obtained by our competitors could threaten a product's continued life in the market even after it has already been introduced. If our business is successful, the possibility may increase that others will assert infringement claims against us.

If we believe our product is or may be the subject of a patent or other intellectual property rights of a third party, we may attempt to reach a license agreement with them to manufacture, market, and sell these products. If we fail to reach an agreement, we could be required to pay significant damages to third parties for past use of the asserted intellectual property and may be forced to cease making or selling products that incorporate the challenged intellectual property.

In addition, we may become subject to interference proceedings conducted in the United States Patent Office or opposition proceedings conducted in foreign patent offices challenging the priority of invention or the validity of our patents.

Risks Related to Our Common Stock

Our stock price may be volatile, and an investment in our common stock could suffer a decline in value.

There can be significant volatility in the market price and trading volume of equity securities that is unrelated to the financial performance of the companies issuing the securities. These broad market fluctuations may negatively affect the market price of our common stock. Shareholders may not be able to resell their shares at or above the price at which they purchased them due to fluctuations in the market price of our common stock caused by changes in our operating performance or prospects, a reduced volume of trading in our common stock, and other factors.

Some factors that may have a significant effect on our common stock market price include:

- actual or anticipated fluctuations in our operating results or future prospects;
- our announcements or our competitors' announcements of new products;
- public concern as to the safety or efficacy of our products and services;
- the public's reaction to our press releases, our other public announcements, and our filings with the SEC;
- our determination whether or not to continue the payment of quarterly cash dividends;
- our determination whether or not to undertake or continue a share repurchase program;
- strategic actions by us or our competitors, such as acquisitions, divestitures or restructurings;
- dilutive issuances of additional securities;
- changes in our growth rates or our competitors' growth rates;
- developments regarding our patents or proprietary rights or those of our competitors;
- our inability to raise additional capital;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- the discontinuation of a product line or other revenue generating activity;
- adverse regulatory actions which may necessitate recalls of our products or services or warning letters that negatively affect the markets for our products or services;
- sales of common stock by us or our directors, officers, or principal stockholders;
- control by our affiliates and insiders of a significant percentage of our common stock;
- changes in stock market analyst recommendations or earnings estimates regarding our common stock, comparable companies, or our industry generally;
- reduced or lower volume of trading in our common stock; and
- our inclusion in or removal from stock market indices, such as the S&P 600 or Russell 2000.

In the past, following periods of volatility in the market price of a company's securities, securities class action litigation has often been brought. This litigation, if brought against us, could result in substantial costs and a diversion of our management's attention and resources.

Our chief executive officer has significant voting power and may take actions that may not align with the interests of our other stockholders.

Our chief executive officer and the LeMaitre Family LLC collectively control approximately 16% of our outstanding common stock as of December 31, 2019. As a result, these stockholders, if they were to act together, could have significant influence on many matters requiring stockholder approval, including the election of directors and approval of significant corporate transactions. This concentration of ownership may have the effect of delaying or preventing a change in control, might adversely affect the market price of our common stock, and may not be fully aligned with the interests of other stockholders.

We have not established a minimum dividend payment level for our common stockholders and there are no assurances of our ability to pay dividends to common stockholders in the future.

In February 2011, our Board of Directors adopted a quarterly dividend program for the purpose of returning capital to our stockholders. However, we have not established a minimum dividend payment level for our common stockholders and our ability to pay dividends may be harmed by the risks and uncertainties described in this Annual Report on Form 10-K and in the other documents we file from time to time with the SEC. Future dividends, if any, will be authorized by our Board of Directors and declared by us based upon a variety of factors deemed relevant by our directors, including, among other things, our financial condition, liquidity, earnings projections and business prospects. In addition, financial covenants in any credit facility to which we become a party may restrict our ability to pay future quarterly dividends. We can provide no assurance of our ability to pay dividends in the future.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

Our principal worldwide executive, distribution, and manufacturing operations are located at three adjacent 27,098 square foot, 27,289 square foot and 15,642 square foot leased facilities, as well as a fourth nearby 12,878 square foot leased facility, in Burlington, Massachusetts. In November 2019 we leased a fifth 26,447 square foot building from the same landlord from whom we lease the other four buildings, and extended the lease terms on the other four buildings, such that all five leases run through December 2030. In addition, our international operations are headquartered at a 13,948 square foot leased facility located in Sulzbach, Germany, with a lease expiring in August 2023. We also lease additional manufacturing, processing, distribution and sales offices in other U.S., Europe and Asia/Pacific Rim locations. Based on our current operating plans, we believe our current facilities are adequate for our needs.

Item 3. Legal Proceedings

In the ordinary course of business, we are from time to time involved in lawsuits, claims, investigations, proceedings, and threats of litigation consisting of intellectual property, contractual, commercial, employment, and other matters. While the outcome of these proceedings and claims cannot be predicted with certainty, there are no matters, as of December 31, 2019, that, in the opinion of management, would be reasonably expected to have a material adverse effect on our financial position, results of operations or cash flows.

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

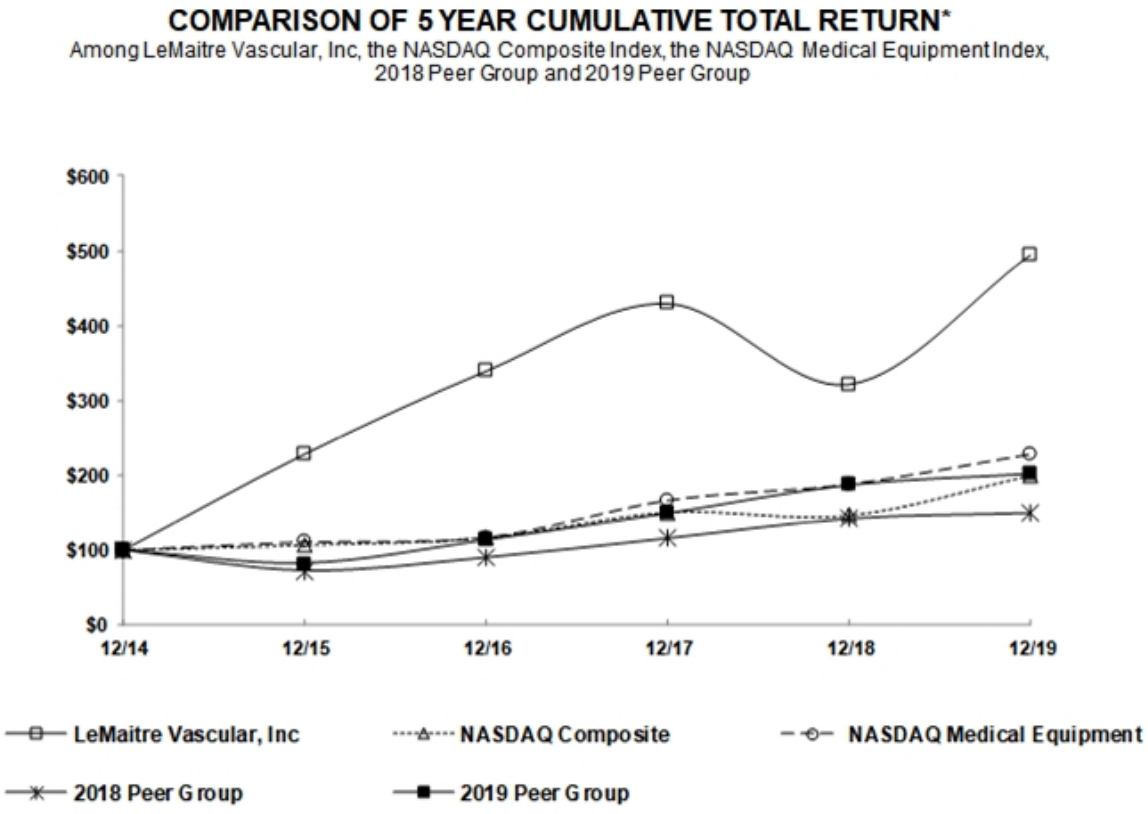
Our common stock is publicly traded on The Nasdaq Global Market under the symbol "LMAT". Prior to our initial public offering on October 19, 2006, there was no public trading market for our common stock.

Holders of Record

On March 2, 2020, the closing price per share of our common stock was $29.03 as reported on The Nasdaq Global Market, and we had approximately 167 stockholders of record. In addition, we believe that a significant number of beneficial owners of our common stock hold their shares in street name.

Stock Price Performance Graph

Set forth below is a graph comparing the cumulative total stockholder return on LeMaitre's common stock with the Nasdaq US Composite Index, the Nasdaq Medical Equipment Index and a peer group for the period covering from December 31, 2014, through the end of LeMaitre's fiscal year ended December 31, 2019. The graph assumes an investment of $100.00 made on December 31, 2014, in (i) LeMaitre's common stock, (ii) the stocks comprising the Nasdaq US Composite Index, (iii) the stocks comprising the Nasdaq Medical Equipment Index and (iv) the stocks comprising our peer groups. The following shall not be deemed incorporated by reference into any of our other filings under the Securities Exchange Act of 1934, as amended, or the Securities Act of 1933, as amended, except to the extent we specifically incorporate it by reference into such filings.
The comparisons in the graph below are based upon historical data and are not indicative of, nor intended to forecast, future performance of our common stock.



	12/14	12/15	12/16	12/17	12/18	12/19
LeMaitre Vascular, Inc	100.00	228.79	339.73	430.03	321.97	495.09
NASDAQ Composite	100.00	106.96	116.45	150.96	146.67	200.49
NASDAQ Medical Equipment	100.00	111.06	116.87	166.41	187.88	227.84
2017 Peer Group	100.00	72.18	89.95	115.81	142.51	150.13
2018 Peer Group	100.00	82.23	113.32	148.98	186.90	201.98

LeMaitre's fiscal year ends on the last day of December each year; data in the above table reflects market values for our stock and Nasdaq and peer group indices as of the close of trading on the last trading day of the year presented.

The 2018 peer group includes the following companies: AngioDynamics, Inc., Cardiovascular Systems Inc., Cryolife Inc., Endologix, Inc., Merit Medical Systems, Inc., and Penumbra, Inc.

The 2019 peer group includes the following companies: AngioDynamics, Inc., Cardiovascular Systems Inc., Cryolife Inc., Merit Medical Systems, Inc., Penumbra, Inc, Silk Road Medical, Inc, and Shockwave Medical, Inc. This new peer group differs from our old peer group. Specifically, we removed Endologix, Inc. as the decline in market value of that company indicated a going concern issue. We also added Silk Road Medical, Inc, and Shockwave Medical, Inc. due to their recent initial public offerings and vascular surgeon call points.

Recent Sales of Unregistered Securities

Not Applicable.

Issuer Purchases of Equity Securities

	Issuer Purchases of Equity Securities			
Period	**Total Number of Shares (or Units) Purchased (1)**	**Average Price Paid Per Share (or Unit)**	**Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Program**	**Maximum Number (or Approximate Dollar Value) of Shares (or Units) that may yet be Purchased under the Plans or Program**
October 1, 2019 through October 31, 2019	-	$ -	N/A	N/A
November 1, 2019 through November 30, 2019	-	$ -	N/A	N/A
December 1, 2019 through December 31, 2019	6,657	$ 35.66	N/A	N/A
Total	6,657	$ 35.66	N/A	N/A

(1) For the three months ended December 31, 2019, we repurchased 6,657 shares of our common stock to satisfy employees' obligations with respect to minimum statutory withholding taxes in connection with the vesting of restricted stock units.

Item 6. Selected Financial Data

You should read the following selected consolidated financial data in conjunction with our consolidated financial statements and the related notes which are included elsewhere in this Annual Report and the "Management's Discussion and Analysis of Financial Condition and Results of Operations" section of this Annual Report. We have derived the consolidated statement of operations data for the years ended December 31, 2019, 2018 and 2017 and the consolidated balance sheet data as of December 31, 2019 and 2018, from our audited consolidated financial statements, which are included elsewhere in this Annual Report. We have derived the consolidated statement of operations data for the years ended December 31, 2016 and 2015, and the consolidated balance sheet data as of December 31, 2017, 2016 and 2015 from our audited consolidated financial statements, which are not included in this Annual Report. Our historical results for any prior period are not necessarily indicative of results to be expected for any future period.

	Year ended December 31,				
	2019	2018	2017	2016	2015
	(in thousands, except per share data)				
Consolidated Statements of Operations Data:					
Net sales	$ 117,232	$ 105,568	$ 100,867	$ 89,151	$ 78,352
Cost of sales	37,379	31,629	30,170	26,215	24,186
Gross profit	79,853	73,939	70,697	62,936	54,166
Operating expenses:					
Sales and marketing	30,339	27,318	25,948	26,105	22,780
General and administrative	19,055	17,689	17,010	14,354	14,010
Research and development	9,276	8,197	6,636	6,141	5,479
Medical device excise tax	-	-	-	-	744
Gain on divestitures and acquisitions	-	(7,474)	-	-	(360)
Total operating expenses	58,670	45,730	49,594	46,600	42,653
Income from operations	21,183	28,209	21,103	16,336	11,513
Other income (expense):					
Interest income	698	631	179	81	13
Interest expense	-	(2)	(21)	(14)	-
Foreign currency gain (loss)	(202)	(394)	(155)	(161)	(102)
Total other income (loss)	496	235	3	(94)	(89)
Income before income tax	21,679	28,444	21,106	16,242	11,424
Provision for income taxes	3,745	5,501	3,929	5,652	3,666
Net income	$ 17,934	$ 22,943	$ 17,177	$ 10,590	$ 7,758
Earnings per share of common stock:					
Basic	$ 0.91	$ 1.18	$ 0.91	$ 0.57	$ 0.44
Diluted	$ 0.88	$ 1.13	$ 0.86	$ 0.55	$ 0.42
Weighted-average shares outstanding:					
Basic	19,813	19,426	18,961	18,485	17,764
Diluted	20,326	20,242	20,033	19,241	18,316
Cash dividends declared per common share	$ 0.34	$ 0.28	$ 0.22	$ 0.18	$ 0.16

	Year ended December 31,				
	2019	2018	2017	2016	2015
			(in thousands)		
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 11,786	$ 26,318	$ 19,096	$ 24,288	$ 27,451
Short-term marketable securities	20,895	21,668	22,564	-	-
Current assets	92,092	94,017	80,311	59,027	58,184
Total assets	188,341	153,088	126,323	101,924	90,704
Current liabilities	20,851	19,758	13,189	10,482	10,368
Long-term liabilities	5,394	3,095	3,364	3,942	2,452
Total liabilities	40,200	22,853	16,553	14,424	12,820
Total stockholders' equity	148,141	130,235	109,770	87,500	77,884

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

The following discussion should be read in conjunction with our consolidated financial statements and the related notes contained elsewhere in this Annual Report on Form 10-K and in our other Securities and Exchange Commission filings. The following discussion may contain predictions, estimates, and other forward-looking statements that involve a number of risks and uncertainties, including those discussed under "Risk Factors" and elsewhere in this Annual Report on Form 10-K. These risks could cause our actual results to differ materially from any future performance suggested below.

Overview

We are a medical device company that develops, manufactures, and markets medical devices and implants largely used in the treatment of peripheral vascular disease. To a lesser extent, our devices also treat cardiovascular disease and are used in neurosurgery applications. We also provide processing and cryopreservation services of peripheral vascular human tissue for implantation into patients. Our principal product offerings are sold throughout the world, primarily in the United States, Europe and Asia/Pacific Rim. We estimate that the annual worldwide market for all of our devices exceeds $5 billion, within which our core product lines address roughly $900 million. We have grown our business using a three-pronged strategy: 1) pursuing a focused call point, 2) competing for sales of low-rivalry niche products, and 3) expanding our worldwide direct sales force while acquiring and developing complementary vascular and other devices. We have used acquisitions as a primary means of further accessing the peripheral vascular device market, and we expect to continue to pursue this strategy in the future. We currently manufacture most of our products in our Burlington, Massachusetts headquarters.

Our products are used primarily by vascular surgeons who treat peripheral vascular disease through both open surgery and endovascular techniques. In contrast to interventional cardiologists and interventional radiologists, neither of whom are certified to perform open surgical procedures, vascular surgeons can perform both open surgery and minimally invasive endovascular procedures, and are therefore uniquely positioned to provide a wider range of treatment options to patients.

Our principal product lines include the following: valvulotomes, biologic vascular patches, carotid shunts, embolectomy catheters, biologic vascular grafts, anastomotic clips, radiopaque marking tape, powered phlebectomy devices, prosthetic vascular grafts, surgical glue and remote endarterectomy devices. Through our RestoreFlow allografts business we also provide services related to the processing and cryopreservation of human vascular and cardiac tissue.

To assist us in evaluating our business strategies, we regularly monitor long-term technology trends in peripheral vascular and other device markets. Additionally, we consider the information obtained from discussions with the medical community in connection with the demand for our products, including potential new product launches. We also use this information to help determine our competitive position and our manufacturing capacity requirements.

Historically we have experienced success in lower-rivalry niche product segments, for example the markets for valvulotome devices and biologic vascular patches. More recently, however, we have faced increased competition in the biologic vascular patch segment, which has inhibited our ability to continue to increase market share or to implement selling price increases. In the valvulotome market, our highly differentiated devices have historically allowed us to increase our selling prices while maintaining our unit market share. In contrast, we have experienced less success in highly competitive markets such as our ProCol biologic graft product line, where we face strong competition from larger companies with greater resources. While we believe that these challenging market dynamics can be mitigated by our relationships with vascular surgeons, there can be no assurance that we will be successful in these highly competitive markets.

In recent years we have also experienced success in international markets, such as Europe, where we sometimes offer comparatively lower average selling prices. If we continue to seek growth opportunities outside of North America, we may experience downward pressure on our gross margin.

Our business opportunities include the following:

- the long-term growth of our direct sales force in North America, Europe and Asia/Pacific Rim;
- the addition of complementary products through acquisitions;
- the introduction of our products in new territories upon receipt of regulatory approvals or registrations in these territories;
- the updating of existing products and introduction of new products through research and development; and
- the consolidation of product manufacturing into our Burlington, Massachusetts corporate headquarters.

We sell our products and services primarily through a direct sales force. As of December 31, 2019 our sales force was comprised of 112 sales representatives in North America, Europe and Asia/Pacific Rim, including three export managers, one in each of the three geographic regions. Our worldwide headquarters is located in Burlington, Massachusetts, and we also have North American sales offices in Chandler, Arizona and Vaughan, Canada. Our European headquarters is located in Sulzbach, Germany, and we also have European sales offices in Milan, Italy; Madrid, Spain; and Hereford, England. Our Asia/Pacific Rim headquarters is located in Singapore, and we have Asia/Pacific Rim sales offices in Tokyo, Japan; Shanghai, China; and North Melbourne, Australia. During the years ended December 31, 2019 and 2018, approximately 94% and 95%, respectively, of our net sales were generated in territories in which we employ direct sales representatives. We also sell our products in other countries, including Korea, Russia and Brazil among others, through distributors.

Because we believe that direct-to-hospital sales engender closer customer relationships, and allow for higher selling prices and gross margins, we periodically enter into transactions with our distributors to transition their sales of our medical devices towards our direct sales organization:

- In December 2015, we signed a master distribution agreement with Meheco Yonstron Pharmaceutical Co. Ltd. (Meheco), a Chinese distribution and logistics company, and began selling our Chinese market products to Meheco in 2016. Meheco then sold our products to multiple sub-distributors who then sold to Chinese hospitals. This agreement expired in December 2017, and we are currently in the process of signing distribution agreements with sub-distributors and have begun selling our products to sub-distributors in China. We repurchased $120,000 of our products from Meheco in 2018, which resulted in a corresponding revenue reversal.

- In March 2018, we terminated our master distribution agreement with Sinopharm United Medical Device Co., Ltd. (UCMC) under which we sold our powered phlebectomy systems and related disposable devices for distribution in China. In April 2018 we began selling these products to our sub-distributors in China. We repurchased $159,000 of our products from UCMC in 2019.

- During 2018, we entered into definitive agreements with several former Applied Medical and Cardial distributors in Europe and Asia/Pacific Rim in order to terminate their distribution of our recently acquired catheter, polyester graft and valvulotome products, and we began selling direct-to-hospitals in those geographies. The termination fees totaled approximately $0.1 million.

Our strategy for growing our business includes the acquisition of complementary product lines and companies, and occasionally the discontinuance or divestiture of products or activities that are no longer complementary:

- In November 2016, we acquired substantially all of the assets related to the peripheral vascular allograft operations of Restore Flow Allografts, LLC for $12.0 million plus additional payments of up to $6.0 million depending upon the satisfaction of certain contingencies.
- In April 2018, we sold our Reddick cholangiogram catheter and Reddick-Saye screw product lines to Specialty Surgical Instrumentation, Inc. for $7.4 million.
- In September 2018, we acquired the assets of the embolectomy catheter business from Applied Medical Resources Corporation for $14.2 million. We have initiated a project to transfer the manufacturing of the acquired devices to our Burlington facility. We expect this transition to be completed in 2020.
- In October 2018, we acquired the assets of Cardial, a subsidiary of Becton, Dickinson & Company, located in Saint-Etienne, France, for €2.0 million. Cardial's product lines include polyester vascular grafts, valvulotomes and surgical glue.
- In July 2019, we entered into an agreement with UreSil, LLC to purchase the remaining assets of their Tru-Incise valve cutter business, including distribution rights in the United States, for $8.0 million.
- In October 2019, we acquired the assets of the CardioCel and VascuCel biologic patch business from Admedus Ltd for $15.5 million plus additional payments of up to $7.8 million depending upon the satisfaction of certain contingencies.

In addition to relying upon acquisitions for growth, we also rely on internal product development efforts to bring differentiated technology and next-generation products to market:

- In 2017, we launched a longer version of our Anastoclip AC intended for use in neurosurgery applications.
- In 2018, we expanded the indications for our Anastoclip GC in the United States to include dura tissue repair.
- In 2019, we launched XenoSure *Plus* aimed at surgeons who prefer using a biologic patch that is thicker and stiffer than our standard XenoSure patch.
- In 2019, we launched DuraSure, a biologic patch indicated for closing or repairing dural defects in neurosurgical procedures.

In addition to our sales growth strategies, we have also executed several operational initiatives designed to consolidate and streamline manufacturing within our Burlington, Massachusetts facilities. We expect these plant consolidations will result in improved control over our production quality as well as reduced costs over the long-term. Our most recent manufacturing transitions included

- In 2016, we initiated a project to transfer the manufacturing of the ProCol biologic product line to our facility in Burlington. This transition was completed in 2018.
- In 2017, we renovated our manufacturing facility in Burlington, in which many of our biologic offerings, including the XenoSure patch as well as our ProCol biologic grafts, are produced or processed. The cost of the facility renovation was approximately $3.0 million.
- In 2018, we acquired the embolectomy catheter business assets from Applied Medical Resources Corporation. We have initiated a project to transfer the manufacturing of the acquired devices to our Burlington facility. We expect this transfer to be completed in 2020.
- In 2019, we again built out our biologic manufacturing cleanroom in Burlington so that we can transfer our Omniflow biosynthetic graft from our North Melbourne, Australia facility. We expect this transfer to be completed in 2020. The cost of the buildout was approximately $0.8 million.

Our execution of these business opportunities may affect the comparability of our financial results from period to period and may cause substantial fluctuations from period to period as we incur related process engineering and other charges.

Fluctuations in the exchange rates between the U.S. dollar and foreign currencies, primarily the Euro, affect our financial results. For the year ended December 31, 2019, approximately 46% of our sales took place outside the United States, largely in currencies other than the U.S. dollar. We expect foreign currencies will represent a significant percentage of our future sales. Selling, marketing, and administrative costs related to these sales are also denominated in foreign currencies, thereby partially mitigating our bottom-line exposure to exchange rate fluctuations. However, if there is an increase in the rate at which a foreign currency is exchanged for U.S. dollars, it will require more of the foreign currency to equal a specified amount of U.S. dollars than before the rate increase. In such cases we will receive less revenue in U.S. dollars than we did before the exchange rate changed. For the year ended December 31, 2019, we estimate that the effects of changes in foreign exchange rates decreased reported sales by approximately $2.3 million, as compared to rates in effect for the year ended December 31, 2018.

Net Sales and Expense Components

The following is a description of the primary components of our net sales and expenses:

Net sales. We derive our net sales from the sale of our products and services, less discounts and returns. Net sales include the shipping and handling fees paid for by our customers. Most of our sales are generated by our direct sales force and are shipped and billed to hospitals or clinics throughout the world. In countries where we do not have a direct sales force, sales are primarily to distributors, who in turn sell to hospitals and clinics. In certain cases our products are held on consignment at a hospital or clinic prior to purchase; in those instances we recognize revenue at the time the product is used in surgery rather than at shipment.

Cost of sales. We manufacture the majority of the products that we sell. Our cost of sales consists primarily of manufacturing personnel, raw materials and components, depreciation of property and equipment, and other allocated manufacturing overhead, as well as freight expense we pay to ship products to customers.

Sales and marketing. Our sales and marketing expense consists primarily of salaries, commissions, stock based compensation, travel and entertainment, attendance at vascular congresses, training programs, advertising and product promotions, direct mail and other marketing costs.

General and administrative. General and administrative expense consists primarily of executive, finance and human resource salaries, stock based compensation, legal and accounting fees, information technology expense, intangible asset amortization expense and insurance expense.

Research and development. Research and development expense includes costs associated with the design, development, testing, enhancement and regulatory approval of our products, principally salaries, laboratory testing and supply costs. It also includes costs associated with design and execution of clinical studies, regulatory submissions and costs to register, maintain, and defend our intellectual property, and royalty payments associated with licensed and acquired intellectual property.

Other income (expense). Other income (expense) primarily includes interest income and expense, foreign currency gains (losses), and other miscellaneous gains (losses).

Income tax expense. We are subject to federal and state income taxes for earnings generated in the United States, which include operating losses or profits in certain foreign jurisdictions for certain years depending on tax elections made, and foreign taxes on earnings of our wholly-owned foreign subsidiaries. Our consolidated tax expense is affected by the mix of our taxable income (loss) in the United States and foreign subsidiaries, permanent items, discrete items, unrecognized tax benefits, and amortization of goodwill for U.S tax reporting purposes.

Results of Operations

Comparison of the year ended December 31, 2019 to the year ended December 31, 2018

The following tables set forth, for the periods indicated, our results of operations and the change between the specified periods expressed as a percentage increase or decrease:

	2019	2018	$ Change	Percent change
	($ in thousands)			
Net sales	$ 117,232	$ 105,568	$ 11,664	11%
Net sales by geography:				
Americas	$ 69,359	$ 63,649	$ 5,710	9%
Europe, Middle East and Africa	39,480	35,319	4,161	12%
Asai/Pacific Rim	8,393	6,600	1,793	27%
Total	$ 117,232	$ 105,568	$ 11,664	11%

Net sales. Net sales increased 11% or $11.7 million to $117.2 million for the year ended December 31, 2019, compared to $105.6 million for the year ended December 31, 2018. Sales increases were primarily driven by increased sales of our embolectomy catheters of $4.3 million, of which $3.4 million was from our late 2018 acquisition of Syntel and Python products; valvulotomes of $1.6 million, of which $1.2 million was from our Tru-Incise and Chevalier acquisitions in 2019 and 2018, respectively; and polyester grafts of $1.5 million, of which $0.4 million was from Cardial products acquired in late 2018. We also had an increase in human tissue cryopreservation service revenues from our RestoreFlow allograft business of $1.4 million. Our recently acquired CardioCel and VascuCel products contributed combined sales of $1.2 million in 2019. These and other product line increases were partially offset by decreased sales of powered phlebectomy systems of $0.8 million.

Direct-to-hospital net sales were 94% for the year ended December 31, 2019 and 95% for the year ended December 31, 2018.

Net sales by geography. Net sales in the Americas increased $5.7 million or 9% for the year ended December 31, 2019. The increase was primarily driven by increased sales of embolectomy catheters of $2.6 million, in part due to our acquisition of the Syntel embolectomy catheters, and increased human tissue cryopreservation services of $1.4 million related to our RestoreFlow allograft business. We also increased sales of valvulotomes by $1.1 million, and our recently acquired CardioCel and VascuCel products contributed sales of $0.9 million in the Americas in 2019. These increases were partially offset by decreased sales of powered phlebectomy systems of $0.8 million.

Europe, Middle East and Africa net sales increased $4.2 million or 12% for the year ended December 31, 2019. The increase was primarily driven by increased sales of polyester grafts of $1.3 million, embolectomy catheters of $0.8 million, OEM sales of $0.7 million, valvulotomes of $0.6 million and biosynthetic vascular grafts of $0.4 million.

Asia/Pacific Rim net sales increased $1.8 million or 27% for the year ended December 31, 2019. The increase was driven by increased sales of embolectomy catheters of $0.9 million, closure systems of $0.3 million, occlusion catheters of $0.2 million and biologic vascular patches of $0.2 million. These and other increases were offset in part by decreased sales of valvulotomes of $0.1 million.

	2019	2018	Change	Percent change
	($ in thousands)			
Gross profit	$ 79,853	$ 73,939	$ 5,914	8%
Gross margin	68.1%	70.0%	(1.9%)	*

* Not applicable

Gross Profit. Gross profit increased $5.9 million to $79.9 million for the year ended December 31, 2019, while gross margin decreased by 190 basis points to 68.1% in the period. The gross margin was favorably impacted by higher average selling prices across most product lines, as well manufacturing efficiencies. These increases were more than offset, however, by an unfavorable product mix, including recently acquired products which typically have a lower gross margin prior to being integrated into our Burlington manufacturing operations. Foreign exchange rate changes also had an unfavorable impact.

	2019	2018	$ change	Percent change	2019 as a % of Net Sales	2018 as a % of Net Sales
			($ in thousands)			
Sales and marketing	$ 30,339	$ 27,318	$ 3,021	11%	26%	26%
General and administrative	19,055	17,689	1,366	8%	16%	17%
Research and development	9,276	8,197	1,079	13%	8%	8%
Gain on divestures and acquisitions	-	(7,474)	7,474	*	0%	*
	$ 58,670	$ 45,730	$ 12,940	28%	50%	43%

* Not a meaningful percentage.

Sales and marketing. For the year ended December 31, 2019, sales and marketing expense increased $3.0 million, or 11%, to $30.3 million. The increase was primarily driven by higher personnel costs, including compensation, commissions and travel expenses associated with expanding our sales force. We also had higher costs due to the implementation of customer relationship software. As a percentage of net sales, sales and marketing expense was 26% in both 2019 and 2018.

General and administrative. For the year ended December 31, 2019, general and administrative expense increased $1.4 million, or 8%, to $19.1 million. General and administrative expense increases were primarily related to acquisition-related costs including amortization of intangible assets, professional fees, bank and credit card fees, bad debt expense and facilities costs. As a percentage of net sales, general and administrative expense was 16% for 2019 and 17% for 2018.

Research and development. For the year ended December 31, 2019, research and development expense increased $1.1 million, or 13%, to $9.3 million. Product development and process engineering increased $0.8 million on a combined basis, in large part due to transitioning certain acquired products to our Burlington manufacturing operations. Clinical and regulatory expenses increased $0.3 million, related to regulatory submissions for new products in geographies such as China and Japan, and testing related to our biologic product offerings.

Gain on divestitures and acquisitions. The 2018 gains on divestitures and acquisitions relate to the sale of our Reddick cholangiogram catheter and Reddick-Saye screw product lines to Symmetry Surgical, which resulted in a gain of $5.9 million, and also to our purchase of the assets of Cardial, from Becton Dickinson, which resulted in a gain of $1.6 million.

Other income (expense). Interest income was $0.7 million and $0.6 million, respectively for 2019 and 2018. Foreign exchange losses on settlements or remeasurement of receivables and payables denominated in foreign currencies were $0.2 million and $0.4 million in 2019 and 2018, respectively.

Income tax expense. We recorded a provision for taxes of $3.7 million on pre-tax income of $21.7 million in 2019 as compared to $5.5 million on pre-tax income of $28.4 million in 2018. The 2019 provision was comprised of a federal tax provision in the United States of $2.0 million, a state tax provision of $0.4 million, and a foreign tax provision of $1.3 million. The 2018 provision was comprised of a federal tax provision in the United States of $2.8 million, a state tax provision of $0.5 million and a foreign tax provision of $2.2 million. Our effective tax rate differed from the U.S. statutory tax rate in 2019 principally because of stock option exercises, taxes on foreign earnings, valuation allowances, and certain permanent differences. While it is often difficult to predict the final outcome or timing of the resolution of any particular tax matter, we believe that our tax reserves reflect the probable outcome of known contingencies.

We assess the likelihood that our deferred tax assets will be realized through future taxable income and record a valuation allowance to reduce gross deferred tax assets to an amount we believe is more likely than not to be realized. As of December 31, 2019, we have provided a valuation allowance of $1.4 million for deferred tax assets primarily related to Australian net operating loss and capital loss carry forwards and Massachusetts tax credit carry forwards that are not expected to be realized.

Refer to Note 8 to our consolidated financial statements for additional information about income tax expense (benefit) including information related to U.S. tax reform legislation.

Comparison of the year ended December 31, 2018 to the year ended December 31, 2017

The following tables set forth, for the periods indicated, our results of operations and the change between the specified periods expressed as a percentage increase or decrease:

	2018	2017	$ Change	Percent change
	($ in thousands)			
Net sales	$ 105,568	$ 100,867	$ 4,701	5%
Net sales by geography:				
Americas	$ 63,649	$ 62,696	$ 953	2%
Europe, Middle East and Africa	35,319	32,516	2,803	9%
Asai/Pacific Rim	6,600	5,655	945	17%
Total	$ 105,568	$ 100,867	$ 4,701	5%

Net sales. Net sales increased 5% or $4.7 million to $105.6 million for the year ended December 31, 2018, compared to $100.9 million for the year ended December 31, 2017. Sales increases were primarily driven by increased sales of our biologic vascular patches of $1.7 million, carotid shunts of $1.2 million, embolectomy catheters of $1.2 million, of which $0.8 million was from our recent Syntel acquisition, and valvulotomes of $0.6 million. We also had an increase in human tissue cryopreservation service revenues from our RestoreFlow allograft business of $1.2 million. These and other product line increases were partially offset by decreased sales of $1.1 million due to the divestiture of our Reddick cholangiogram catheter product in early Q2 2018 and decreased sales of our closure systems of $0.7 million.

Direct-to-hospital net sales were 95% for the year ended December 31, 2018 and 93% for the year ended December 31, 2017.

Net sales by geography. Net sales in the Americas increased $1.0 million for the year ended December 31, 2018. The increase was primarily driven by increased human tissue cryopreservation services of $1.2 million. We also had increased sales of embolectomy catheters of $0.7 million, in part due to our acquisition of Syntel, as well as increased sales of valvulotomes, carotid shunts and biologic vascular patches of $0.5 million each. These increases were partially offset by decreases in sales associated with the divestiture of the Reddick product line of $1.2 million, as well as lower sales of radiopaque tape of $0.5 million and closure systems of $0.4 million.

Europe, Middle East and Africa net sales increased $2.8 million for the year ended December 31, 2018. The increase was primarily driven by increased sales of biologic vascular patches of $1.1 million, polyester grafts of $0.4 million, embolectomy catheters of $0.3 million and carotid shunts of $0.2 million. We also had sales of surgical glue of $0.6 million in connection with our recent Cardial acquisition.

Asia/Pacific Rim net sales increased $0.9 million for the year ended December 31, 2018. The increase was primarily driven by increased sales of carotid shunts of $0.5 million, and embolectomy and occlusion catheters of $0.2 million each, and valvulotomes of $0.1 million each. These increases were offset in part by decreased sales of closure systems to China.

	2018	2017	Change	Percent change
	($ in thousands)			
Gross profit	$ 73,939	$ 70,697	$ 3,242	5%
Gross margin	70.0%	70.1%	(0.1%)	*

* Not applicable

Gross Profit. Gross profit increased $3.2 million to $73.9 million for the year ended December 31, 2018, while gross margin decreased by 10 basis points to 70.0% in the period. The gross margin was favorably impacted by higher average selling prices across most product lines, a more favorable product mix, including increased sales of our biologic patch products, and the favorable impact from changes in foreign exchange rates. These increases were offset, however, by manufacturing inefficiencies as well as higher manufacturing overhead costs experienced for certain of our product lines.

	2018	2017	$ change	Percent change	2018 as a % of Net Sales	2017 as a % of Net Sales
			($ in thousands)			
Sales and marketing	$ 27,318	$ 25,948	$ 1,370	5%	26%	26%
General and administrative	17,689	17,010	679	4%	17%	17%
Research and development	8,197	6,636	1,561	24%	8%	7%
Gain on divestures and acquisitions	(7,474)	-	(7,474)	*	(7%)	*
	$ 45,730	$ 49,594	$ (3,864)	(8%)	43%	49%

* Not a meaningful percentage.

Sales and marketing. For the year ended December 31, 2018, sales and marketing expense increased $1.4 million, or 5%, to $27.3 million. The increase was primarily driven by higher personnel costs, including compensation, recruiting, sales meeting and travel expenses associated with expanding the sales force. As a percentage of net sales, sales and marketing expense was 26% in both 2018 and 2017.

General and administrative. For the year ended December 31, 2018, general and administrative expense increased $0.7 million, or 4%, to $17.7 million. General and administrative expense increases were primarily related to compensation costs, professional fees and travel expense, offset in part by lower acquisition-related costs and facilities costs. The compensation expense increase in 2018 was in part due to the January 1, 2018 reinstatement of our Chief Executive Officer's compensation, which he had forgone (except as to the amount legally required) for the last seven months of 2017. As a percentage of net sales, general and administrative expense was 17% for both 2018 and 2017.

Research and development. For the year ended December 31, 2018, research and development expense increased $1.6 million, or 24%, to $8.2 million. Clinical and regulatory expenses increased $1.0 million and product development expense increased $0.6 million. These increases were primarily related to regulatory submissions for new products in geographies such as China and Japan, and testing related to our biologic product offerings.

Gain on divestitures and acquisitions. On April 5, 2018, we entered into an asset purchase agreement with Specialty Surgical Instrumentation, Inc. to sell the inventory, intellectual property and other assets associated with our Reddick cholangiogram catheter and Reddick-Saye screw product lines for $7.4 million. During the three months ended June 30, 2018 we recorded a gain in connection with these agreements of $5.9 million. On October 22, 2018, we entered into an agreement to acquire the assets of Cardial, a subsidiary of Becton Dickinson, whose business consists of the manufacture and sale of polyester vascular grafts, valvulotomes and surgical glue, for a purchase price of €1.2 million ($1.4 million). In connection with this asset purchase, we simultaneously entered into an agreement to purchase Cardial's land and building for €0.8 million ($0.9 million), bringing the total price paid to €2.0 million ($2.3 million). During the three months ended December 31, 2018 we recorded a bargain purchase gain of €1.4 million ($1.6 million) in connection with these agreements resulting from the excess value of the assets acquired over the purchase price, subject to finalization of the purchase accounting.

Other income (expense). Interest income was $0.6 million and $0.2 million, respectively for 2018 and 2017. Foreign exchange losses on settlements or remeasurement of receivables and payables denominated in foreign currencies were $0.4 million and $0.2 million in 2018 and 2017, respectively.

Income tax expense. We recorded a provision for taxes of $5.5 million on pre-tax income of $28.4 million in 2018 as compared to $3.9 million on pre-tax income of $21.1 million in 2017. The 2018 provision was comprised of a federal tax provision in the United States of $2.8 million, a state tax provision of $0.5 million, and a foreign tax provision of $2.2 million. The 2017 provision was comprised of a federal tax provision in the United States of $2.2 million, a state tax provision of $0.7 million and a foreign tax provision of $1.0 million. Our effective tax rate differed from the U.S. statutory tax rate in 2018 principally because of stock option exercises, taxes on foreign earnings, valuation allowances, and certain permanent differences. While it is often difficult to predict the final outcome or timing of the resolution of any particular tax matter, we believe that our tax reserves reflect the probable outcome of known contingencies.

We assess the likelihood that our deferred tax assets will be realized through future taxable income and record a valuation allowance to reduce gross deferred tax assets to an amount we believe is more likely than not to be realized. As of December 31, 2018, we have provided a valuation allowance of $1.3 million for deferred tax assets primarily related to Australian net operating loss and capital loss carry forwards and Massachusetts tax credit carry forwards that are not expected to be realized.

Refer to Note 8 to our consolidated financial statements for additional information about income tax expense (benefit) including information related to U.S. tax reform legislation.

Liquidity and Capital Resources

At December 31, 2019, we held $11.8 million in cash and cash equivalents and $20.9 million in a short-term managed income mutual fund investment, as compared to $26.3 million in cash and cash equivalents and $21.7 million in the mutual fund investment at December 31, 2018. Our cash and cash equivalents are highly liquid investments with maturities of 90 days or less at the date of purchase, consist of money market funds, and are stated at cost, which approximates fair value. Our short-term marketable securities consist of a managed income mutual fund investing mainly in short-term investment grade, U.S.-dollar denominated fixed and floating-rate debt. All of our cash held outside of the United States is available for corporate use, with the exception of $3.3 million held by subsidiaries in jurisdictions for which earnings are planned to be permanently reinvested.

On February 14, 2019, our Board of Directors authorized the repurchase of up to $10.0 million of the Company’s common stock through transactions on the open market, in privately negotiated purchases or otherwise until February 14, 2020. On February 13, 2020, the Board extended the term of this repurchase program to February 14, 2021. The repurchase program may be suspended or discontinued at any time. To date we have not made any repurchases under this program.

Operating and Capital Expenditure Requirements

We require cash to pay our operating expenses, make capital expenditures, and pay our long-term liabilities. Since our inception, we have funded our operations through public offerings and private placements of equity securities, short-term and long-term borrowings, and funds generated from our operations.

We recognized operating income of $21.2 million for the year ended December 31, 2019, $28.2 million for the year ended December 31, 2018, and $21.1 million for the year ended December 31, 2017. We expect to fund any increased costs and expenditures from our existing cash and cash equivalents, though our future capital requirements depend on numerous factors. These factors include, but are not limited to, the following:

- the revenues generated by product sales;
- payments associated with potential future quarterly cash dividends to our common stockholders;
- payments associated with our stock repurchase program;
- future acquisition-related payments;
- payments associated with U.S income and other taxes;
- the costs associated with expanding our manufacturing, marketing, sales, and distribution efforts;
- the costs associated with our initiatives to sell direct-to-hospital in new countries;
- the costs of obtaining and maintaining FDA and other regulatory clearances of our existing and future products; and
- the number, timing, and nature of acquisitions and other strategic transactions.

Our cash balances may decrease as we continue to use cash to fund our operations, make acquisitions, make payments under our quarterly dividend program, repurchase shares of our common stock and make deferred payments related to prior acquisitions. We believe that our cash, cash equivalents, investments and the interest we earn on these balances will be sufficient to meet our anticipated cash requirements for at least the next twelve months. If these sources of cash are insufficient to satisfy our liquidity requirements beyond the next twelve months, we may seek to sell additional equity or debt securities or borrow funds from, or establish a revolving credit facility, with a financial institution. The sale of additional equity and debt securities may result in dilution to our stockholders. If we raise additional funds through the issuance of debt securities, such securities could have rights senior to those of our common stock and could contain covenants that would restrict our operations and possibly our ability to pay dividends. We may require additional capital beyond our currently forecasted amounts. Any such required additional capital may not be available on reasonable terms, if at all.

Cash Flows

	Year ended December 31,		
	2019	2018	2017
		($ in thousands)	
Cash and cash equivalents	$ 11,786	$ 26,318	$ 19,096
Cash flows provided by (used in):			
Operating activities	$ 14,179	$ 19,506	$ 22,868
Investing activities	(24,100)	(7,055)	(28,958)
Financing activities	(4,622)	(4,416)	80

Net cash provided by operating activities. Net cash provided by operating activities was $14.2 million for the year ended December 31, 2019, and consisted of $17.9 million net income, adjusted for non-cash items of $10.1 million (including primarily depreciation and amortization of $5.4 million, stock-based compensation of $2.6 million, provisions for inventory write-offs and doubtful accounts of $1.1 million, a provision for deferred taxes of $0.8 million and fair value adjustments on contingent consideration for acquisitions of $0.2 million, as well as working capital uses of $13.9 million. The net cash used for working capital was driven by increases in inventory of $11.3 million, accounts receivable of $1.3 million, and other current assets of $0.7 million, as well as a decrease in accounts payable and other liabilities of $0.6 million.

Net cash provided by operating activities was $19.5 million for the year ended December 31, 2018, and consisted of $22.9 million net income, adjusted for non-cash items of $1.7 million (including primarily depreciation and amortization of $4.3 million, stock-based compensation of $2.3 million, provisions for inventory write-offs and doubtful accounts of $1.0 million, a benefit for deferred taxes of $2.2 million and gains on acquisitions and divestitures of $7.5 million), as well as working capital uses of $1.7 million. The net cash used for working capital was driven by increases in accounts receivable of $1.3 million, inventory of $4.3 million and other current assets of $0.4 million, offset by an increase in accounts payable and other liabilities of $4.3 million.

Net cash provided by operating activities was $22.9 million for the year ended December 31, 2017, and consisted of $17.2 million net income, adjusted for non-cash items of $7.3 million (including primarily depreciation and amortization of $4.1 million, stock-based compensation of $2.3 million, provisions for inventory write-offs and doubtful accounts of $0.6 million, and a provision for deferred taxes of $0.3 million), as well as working capital uses of $1.6 million. The net cash used for working capital was driven by increases in accounts receivable of $1.5 million, inventory of $1.3 million and other current assets of $0.3 million, offset by an increase in accounts payable and other liabilities of $1.5 million.

Net cash used in investing activities. Net cash used in investing activities was $24.1 million for the year ended December 31, 2019, driven by cash paid for acquisitions of $21.2 million, as well as purchases of property and equipment of $3.8 million primarily associated with clean room build-outs at our Burlington, Massachusetts headquarters. These investments were in part offset by net sales of short-term investments of $0.9 million.

Net cash used in investing activities was $7.1 million for the year ended December 31, 2018, driven by cash paid for acquisitions of $12.3 million, as well as purchases of property and equipment of $3.1 million primarily associated with clean room build-outs at our Burlington, Massachusetts headquarters. These investments were in part offset by proceeds from the Reddick divestiture of $7.4 million and net sales of short-term investments of $0.9 million.

Net cash used in investing activities was $29.0 million for year ended December 31, 2017, driven by a $22.5 million purchase of a short-term investment, as well as purchases of property and equipment of $6.4 million primarily associated with the clean room build-outs at our Burlington, Massachusetts headquarters.

Net cash provided by (used in) financing activities. Net cash used in financing activities was $4.6 million for the year ended December 31, 2019, driven primarily by payments of common stock dividends of $6.7 million and payments related to our prior acquisitions of $2.1 million. We had proceeds from stock option exercises of $4.9 million, offset by the acquisition of $0.7 million of treasury shares to cover minimum withholding taxes on restricted stock unit vestings.

Net cash used in financing activities was $4.4 million for the year ended December 31, 2018, driven primarily by payments of common stock dividends of $5.4 million and payments related to our prior acquisitions of $1.2 million. We had proceeds from stock option exercises of $3.0 million, offset by the acquisition of $0.7 million of treasury shares to cover minimum withholding taxes on restricted stock unit vestings.

Net cash provided by financing activities was $0.1 million for the year ended December 31, 2017, driven primarily by proceeds from stock option exercises of $5.5 million, offset by the acquisition of $0.8 million of treasury shares to cover minimum withholding taxes on restricted stock unit vestings and by payments of common stock dividends of $4.2 million. We also made payments related to our prior acquisitions of $0.4 million.

Dividends. In February 2011, our Board of Directors approved a policy for the payment of quarterly cash dividends on our common stock. Future declarations of quarterly dividends and the establishment of future record and payment dates are subject to approval by our Board of Directors on a quarterly basis. The dividend activity for the periods presented is as follows:

Record Date	Payment Date	Per Share Amount	Dividend Payment
			(in thousands)
Fiscal Year 2019			
March 22, 2019	April 5, 2019	$ 0.085	$ 1,672
May 22, 2019	June 6, 2019	$ 0.085	$ 1,672
August 21, 2019	September 5, 2019	$ 0.085	$ 1,691
November 20, 2019	December 5, 2019	$ 0.085	$ 1,701
Fiscal Year 2018			
March 22, 2018	April 5, 2018	$ 0.070	$ 1,351
May 22, 2018	June 7, 2018	$ 0.070	$ 1,353
August 22, 2018	September 6, 2018	$ 0.070	$ 1,369
November 20, 2018	December 6, 2018	$ 0.070	$ 1,372

On February 13, 2020, our Board of Directors approved a quarterly cash dividend on our common stock of $0.095 per share payable on March 19, 2020, to stockholders of record at the close of business on March 3, 2020, which will total approximately $1.9 million.

Contractual obligations. Our principal contractual obligations consist of operating leases and inventory purchase commitments. The following table summarizes our commitments under operating leases as of December 31, 2019:

Contractual obligations	Total	1 Year or Less	2-3 years	3-4 years	5 or More Years
			(in thousands)		
Operating leases	$ 20,272	$ 2,419	$ 4,292	$ 3,259	$ 10,301
Inventory purchase commitments	$ 1,465	$ 1,465	$ -	$ -	$ -

The commitments under our operating leases consist primarily of lease payments for our corporate headquarters and manufacturing facility in Burlington, Massachusetts, expiring in 2030, our Sulzbach, Germany office, expiring in 2023, our Hereford, England office, expiring in 2029, our Vaughan, Canada office expiring in 2023, our Tokyo, Japan office, expiring in 2022; and our Shanghai, China office, expiring in 2020. They also include automobile leases. See Note 7 for additional information on these leases.

We also have inventory purchase commitments of approximately $1.5 million as of December 31, 2019. These commitments are for product used in operations in the normal course of business and do not represent excess commitments or loss contracts.

Critical Accounting Policies and Estimates

We have adopted various accounting policies to prepare our consolidated financial statements in accordance with U.S. generally accepted accounting principles (GAAP). Our most significant accounting policies are described in Note 1 to our consolidated financial statements included elsewhere in this Annual Report on Form 10-K. The preparation of our consolidated financial statements in conformity with GAAP requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Our estimates and assumptions, including those related to bad debts, inventories, intangible assets, sales returns and discounts, and income taxes are reviewed on an ongoing basis and updated as appropriate. Actual results could differ from those estimates.

Certain of our more critical accounting policies require the application of significant judgment by management in selecting the appropriate assumptions for calculating financial estimates. By their nature, these judgments are subject to an inherent degree of uncertainty. These judgments are based on our historical experience, terms of existing contracts, and observance of trends in the industry, as appropriate. Different, reasonable estimates could have been used in the current period. Additionally, changes in accounting estimates are reasonably likely to occur from period to period. Both of these factors could have a material impact on the presentation of our financial condition, changes in financial condition, or results of operations.

We believe that the following financial estimates and related accounting policies are both important to the portrayal of our financial condition and results of operations and require subjective or complex judgments. Further, we believe that the items discussed below are properly recorded in our consolidated financial statements for all periods presented. Management has discussed the development, selection and disclosure of our most critical financial estimates with the audit committee of our board of directors and our independent registered public accounting firm. The judgments about those financial estimates are based on information available as of the date of our consolidated financial statements. Those financial estimates and related policies include:

Revenue Recognition

Our revenue is derived primarily from the sale of disposable or implantable devices used during vascular surgery. We sell primarily directly to hospitals, and to a lesser extent to distributors. We also occasionally enter into consigned inventory arrangements with either hospitals or distributors on a limited basis. Following our acquisition of the RestoreFlow allograft business, we also derive revenues from human tissue cryopreservation services. These service revenues are recognized when services have been provided and the tissue has been shipped to the customer, provided all other revenue recognition criteria discussed below have been met.

On January 1, 2018 we adopted the provisions of ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*. We used the modified retrospective method of adoption under which the comparative information was not restated and will continue to be reported under the standard in effect for those periods. The adoption of this standard was not material to our financial statements and there was no cumulative effect adjustment to the opening balance of retained earnings required. The core principle of Topic 606 is that an entity should recognize revenue to depict the transfer of 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. The standard explains that to achieve the core principle, an entity should take the following actions:

Step 1: Identify the contract with a customer

Step 2: Identify the performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price

Step 5: Recognize revenue when or as the entity satisfies a performance obligation

Revenue is recognized when or as a company satisfies a performance obligation by transferring a promised good or service to a customer (which is when the customer obtains control of that good or service). In instances in which shipping and handling activities are performed after a customer takes control of the goods (such as when title passes upon shipment from our dock), we have made the policy election allowed under Topic 606 to account for these activities as fulfillment costs and not as performance obligations.

We generally reference customer purchase orders to determine the existence of a contract. Orders that are not accompanied by a purchase order are confirmed with the customer in writing or verbally. The purchase orders or similar correspondence, once accepted, identify the performance obligations as well as the transaction price, and otherwise outline the rights and obligations of each party. We allocate the transaction price of each contract among the performance obligations in accordance with the pricing of each item specified on the purchase order, which is in turn based on standalone selling prices per our published price lists. In cases where we discount products or provide certain items free of charge, we allocate the discount proportionately to all performance obligations, unless it can be demonstrated that the discount should be allocated entirely to one or more, but not all, of the performance obligations.

We recognize revenue, net of allowances for returns and discounts, fees paid to group purchasing organizations, and any sales and value added taxes required to be invoiced, which we have elected to exclude from the measurement of the transaction price as allowed by the standard, at the time of shipment (taking into consideration contractual shipping terms), or in the case of consigned inventory, when it is consumed. Shipment is the point at which control of the product and title passes to our customers, and at which LeMaitre has a present right to receive payment for the goods.

Below is a disaggregation of our revenue by major geographic area, which is one of the primary categorizations used by management in evaluating financial performance, for the periods indicated (in thousands):

	Year ended December 31,	
	2019	2018
Americas	$ 69,359	$ 63,649
Europe, Middle East and Africa	$ 39,480	35,319
Asia/Pacific Rim	$ 8,393	6,600
Total	$ 117,232	$ 105,568

Except as discussed in Note 6 to our consolidated financial statements, we do not carry any contract assets or contract liabilities, as there are generally no unbilled amounts due from customers under contracts for which we have partially satisfied performance obligations, or amounts received from customers for which we have not satisfied performance obligations. We satisfy our performance obligations under revenue contracts within a short time period from receipt of the orders, and payments from customers are typically received within 30 to 60 days of fulfillment of the orders, except in certain geographies such as Spain and Italy where the payment cycle is customarily longer. Accordingly, there is no significant financing component to our revenue contracts. Additionally, we have elected as a policy that incremental costs (such as commissions) incurred to obtain contracts are expensed as incurred, due to the short-term nature of the contracts.

Customers returning products may be entitled to full or partial credit based on the condition and timing of the return. To be accepted, a returned product must be unopened (if sterile), unadulterated, and undamaged, must have at least 18 months remaining prior to its expiration date, or twelve months for our hospital customers in Europe, and generally be returned within 30 days of shipment. These return policies apply to sales to both hospitals and distributors. The amount of products returned to us, either for exchange or credit, has not been material. Nevertheless, we provide for an allowance for future sales returns based on historical return experience, which requires judgment. Our cost of replacing defective products has not been material and is accounted for at the time of replacement.

Accounts Receivable

Our accounts receivable are with customers based in the United States and internationally. Accounts receivable generally are due within 30 to 90 days of invoice and are stated at amounts due from customers, net of an allowance for doubtful accounts and sales returns, other than in certain European markets where longer payment terms are customary and may range from 90 to 240 days. We perform ongoing credit evaluations of the financial condition of our customers and adjust credit limits based upon payment history and the current creditworthiness of the customers, as determined by a review of their current credit information. We continuously monitor aging reports, collections, and payments from customers, and maintain a provision for estimated credit losses based upon historical experience and any specific customer collection issues we identify.

We closely monitor outstanding receivables for potential collection risks, including those that may arise from economic conditions, in both the U.S. and international economies. Our European sales to government-owned or supported customers such as hospitals, distributors and agents in Italy and Spain may be subject to significant payment delays due to government austerity measures impacting funding and payment practices. As of December 31, 2019 our receivables in Italy and Spain totaled $1.0 million and $0.8 million, respectively. Receivables balances with certain publicly-owned hospitals and government supported customers in these countries can accumulate over a period of time and then subsequently be settled as large lump sum payments. While we believe our allowance for doubtful accounts in these countries is adequate as of December 31, 2019, if significant changes were to occur in Italy’s or Spain’s payment practices or if government funding becomes unavailable, we may not be able to collect on receivables due to us from these customers and our write offs of uncollectible amounts may increase.

We write off accounts receivable when they become uncollectible. While such credit losses have historically been within our expectations and allowances, we cannot guarantee the same credit loss rates will be experienced in the future. The allowance for doubtful accounts is our best estimate of the amount of probable credit losses in our existing accounts receivable. We review our allowance for doubtful accounts on a monthly basis and all past due balances are reviewed individually for collectability. The provision for the allowance for doubtful accounts is recorded in general and administrative expenses.

Inventory and Other Deferred Costs

Inventory consists of finished products, work-in-process, and raw materials. We value inventory at the lower of cost or market value. Cost includes materials, labor, and manufacturing overhead and is determined using the first-in, first-out (FIFO) method. On a quarterly basis, we review inventory quantities on hand and analyze the provision for excess and obsolete inventory based primarily on product expiration dating and our estimated sales forecast, which is based on sales history and anticipated future demand. Our estimates of future product demand may not be accurate, and we may understate or overstate the provision required for excess and obsolete inventory. Accordingly, any significant unanticipated changes in demand could have a significant impact on the value of our inventory and results of operations.

In connection with our RestoreFlow allograft business, other deferred costs include costs incurred for the preservation of human vascular tissues available for shipment, tissues currently in active processing, and tissues held in quarantine pending release to implantable status. By federal law human tissues cannot be bought or sold. Therefore, the tissues we preserve are not held as inventory, and the costs we incur to procure and process human vascular tissues are instead accumulated and deferred.

Stock-based Compensation

We recognize, as expense, the estimated fair value of stock options to employees which is determined using the Black-Scholes option pricing model. We have elected to recognize the compensation cost of all share-based awards on a straight-line basis over the vesting period of the award. In periods that we grant stock options, fair value assumptions are based on volatility, interest rates, dividend yield, and expected term over which the stock options will be outstanding. The computation of expected volatility is based on the historical volatility of the company's stock. The interest rate for periods within the contractual life of the award is based on the U.S. Treasury risk-free interest rate in effect at the time of grant. Historical data on exercise patterns is the basis for estimating the expected life of an option. The expected annual dividend rate was calculated by dividing our annual dividend, based on the most recent quarterly dividend rate, by the closing stock price on the grant date.

We also issue restricted stock units (RSUs) as an additional form of equity compensation to our employees, officers, and directors, pursuant to our stockholder-approved Second Amended and Restated 2006 Stock Option and Incentive Plan. RSUs entitle the grantee to an issuance of stock at no cost and generally vest over a period of time determined by our Board of Directors at the time of grant based upon the continued service to the company. The fair market value of the award is determined based on the number of RSUs granted and the market value of our common stock on the grant date and is amortized to expense over the period of vesting. Unvested RSUs are forfeited and canceled as of the date that employment or service to the company terminates. RSUs are settled in shares of our common stock upon vesting. We may repurchase common stock upon our employees' vesting in RSUs in order to cover any minimum tax withholding liability as a result of the RSUs having vested.

As disclosed more fully in the notes to our consolidated financial statements, we recorded expense of approximately $2.6 million in connection with share-based payment awards for the year ended December 31, 2019. The future expense of non-vested share-based awards of approximately $10.4 million is to be recognized over a weighted-average period of 3.8 years. During 2019, we granted stock options at a weighted average fair value of $12.51 and RSUs with weighted average fair value of $35.11. Share-based compensation charges are recorded across the consolidated statement of operations based upon the grantee's primary function.

Valuation of Goodwill, and Other Intangibles

Goodwill represents the amount of consideration paid in connection with business acquisitions in excess of the fair value of assets acquired and liabilities assumed. Goodwill is evaluated for impairment annually or more frequently if indicators of impairment are present or changes in circumstances suggest that an impairment may exist. Our assessment is performed as of December 31 each year based on a single reporting unit. We first perform an assessment of qualitative factors to determine if it is "more likely than not" that the fair value of our reporting unit is less than its carrying value as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. The "more likely than not" threshold is defined as having a likelihood of more than 50 percent. If required, the next step of the goodwill impairment test is to determine the fair value of the reporting unit. The implied fair value of goodwill is determined on the same basis as the amount of goodwill recognized in connection with a business combination. Specifically, the fair value of a reporting unit is allocated to all of the assets and liabilities (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination as of the date of the impairment review and as if the fair value of the reporting unit was the price paid to acquire the reporting unit. The excess of the fair value of a reporting unit over the amounts assigned to its assets and liabilities is the implied fair value of goodwill. If the carrying amount of the reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss shall be recognized in an amount equal to that excess. Goodwill was $40.0 million and $29.9 million as of December 31, 2019 and 2018, respectively. Our annual impairment testing indicated no significant risk of impairment based upon changes in value that are reasonably likely to occur. However, changes in these estimates and assumptions could materially affect the estimated fair value of our reporting unit.

Other intangible assets consist primarily of purchased developed technology, patents, customer relationships and trademarks, and are amortized over their estimated useful lives, ranging from 2 to 16 years. We review intangible assets quarterly to determine if any adverse conditions exist for a change in circumstances has occurred that would indicate impairment. Conditions that may indicate impairment include, but are not limited to, a significant adverse change in legal factors or business climate that could affect the value of the asset, a change in the operating cash flows associated with the asset, or adverse action or assessment by a regulator. If an impairment indicator exists we test the intangible asset for recoverability. If the carrying value of the intangible asset exceeds the undiscounted cash flows expected to result from the use and eventual disposition of the intangible asset, we will write the carrying value down to the fair value in the period in which it is identified. We generally calculate the fair value of our intangible assets as the present value of estimated future cash flows we expect to generate from the asset using a risk-adjusted discount rate. In determining our estimated future cash flows associated with our intangible assets, we use estimates and assumptions about future revenue contributions, cost structures, and remaining useful lives of the asset. These estimates and assumptions require significant judgment and actual results may differ from assumed or estimated amounts. Other intangible assets, net of accumulated amortization, were $24.9 million as of December 31, 2019 and $13.7 million as of December 31, 2018.

Contingencies

In the normal course of business, we are subject to proceedings, lawsuits, and other claims and assessments for matters related to, among other things, business acquisitions, employment, commercial matters, intellectual property matters, product liability and product recalls. We assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual issue. The required reserves may change in the future due to new developments in each matter or changes in approach such as a change in settlement strategy in dealing with these matters. We record charges for the costs we anticipate incurring in connection with litigation and claims against us when we determine a loss is probable and we can reasonably estimate these costs. During the years ended December 31, 2019, 2018, and 2017, we were not subject to any material litigation, claims or assessments.

Income Taxes

We account for income taxes under the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred taxes are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. The provision for income taxes includes taxes currently payable and deferred taxes resulting from the tax effects of temporary differences between the financial statement and tax bases of assets and liabilities. We maintain valuation allowances where it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in the valuation allowances are included in our tax provision in the period of change. In determining whether a valuation allowance is warranted, we evaluate factors such as prior earnings history, expected future earnings, carry-back and carry-forward periods and tax strategies that could potentially enhance the likelihood of the realization of a deferred tax asset.

We recognize, measure, present and disclose in our financial statements, uncertain tax positions that we have taken or expect to take on a tax return. We recognize in our financial statements the impact of tax positions that meet a “more likely than not” threshold, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.

Our policy is to classify interest and penalties related to unrecognized tax benefits as income tax expense.

Recent Accounting Pronouncements

On January 1, 2019 we adopted the provisions of ASU No. 2016-02, *Leases (Topic 842)*, subsequently amended by ASU 2018-11, *Leases (Topic 842): Targeted Improvements*. Under the new guidance, we are required to recognize the following for all leases (with the exception of short-term leases) at the commencement date: a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. As allowed by the standard, we elected to use the transition option not to apply the new lease standard to comparative periods but instead to recognize a cumulative-effect adjustment to retained earnings as of the date of adoption, January 1, 2019. Upon adoption of this standard, we recognized lease liabilities of $7.0 million and right-of-use assets in the amount of $6.5 million (net of the reversal of a previously recorded deferred rent liability of $0.5 million). There was no cumulative-effect adjustment to retained earnings required. Additional disclosures required under the new standard are included in Note 6 to these financial statements.

In June 2016, the FASB issued ASU 2016-13 Financial Instruments – Credit Losses (Topic 326), which requires a financial asset (or group of financial assets) measured at amortized cost to be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial asset(s) to present the net carrying value at the amount expected to be collected on the financial asset. The measurement of expected credit losses is based on relevant information about past events, including historical experience, current conditions and reasonable, supportable forecasts that affect the collectability of the reported amount, and requires judgment in determining relevant information and estimation methods. The new standard is effective for us beginning January 1, 2020. The adoption of this standard is not expected to have a material impact on our financial statements, as the only financial assets we have that are affected by the standard are trade receivables for which we have historically employed a collectability estimation technique.

In August 2018, the FASB issued ASU 2018-13 Fair Value Measurement (Topic 820), which modifies the disclosure requirements for fair value measurements. The new standard is effective for us beginning January 1, 2020, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

In January 2017, the FASB issued ASU 2017-04 Intangibles – Goodwill and Other (Topic 350), which, among other provisions, eliminates "step 2" from the goodwill impairment test. The annual, or interim, goodwill impairment test will be performed by comparing the fair value of a reporting unit with its carrying amount. An impairment charge should be recognized for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The new standard is effective for us beginning January 1, 2020, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

In December 2019, the FASB issued ASU 2019-12 Income Taxes (Topic 740), which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740 as well as clarifying and amending other areas of existing GAAP under Topic 740. The new standard is effective for us beginning January 1, 2021, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

Off-Balance Sheet Arrangements

We did not have any off-balance sheet arrangements as of December 31, 2019. We do not currently have, nor have we ever had, any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. In addition, we do not engage in trading activities involving non-exchange traded contracts. As a result, we are not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in these relationships.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

In the ordinary course of conducting business, we are exposed to certain risks associated with potential changes in market conditions. These market risks include changes in currency exchange rates and interest rates which could affect operating results, financial position and cash flows.

Foreign Currency Risk

During fiscal 2019 and 2018, 46% and 44%, respectively, of our total revenue was from customers outside of the United States. In addition, a significant portion of our operating costs incurred outside the United States are denominated in currencies other than the U.S. dollar. We conduct business on a worldwide basis and as a result, a portion of our revenue, earnings, net assets, and net investments in foreign affiliates is exposed to changes in foreign currency exchange rates. We measure our net exposure for cash balance positions and for cash inflows and outflows in order to evaluate the need to mitigate our foreign exchange risk. We may enter into foreign currency forward contracts to minimize the impact related to unfavorable exchange rate movements, although we have not done so during fiscal 2019 and fiscal 2018. Our largest exposures to foreign currency exchange rates exist primarily with the Euro, British pound, Canadian dollar, Australian dollar and Japanese yen.

During the years ended December 31, 2019 and 2018, we recorded $0.2 million and $0.4 million of net foreign currency exchange losses, respectively, related to the settlement and remeasurement of transactions denominated in currencies other than the functional currency of our operating subsidiaries. Our analysis of operating results transacted in various foreign currencies indicated that a hypothetical 10% change in the foreign currency exchange rates could have increased or decreased the consolidated results of operations by approximately $1.2 million for 2019.

Interest Rate Risk

At December 31, 2019, we held $11.8 million in cash and cash equivalents and $20.9 million in a short-term managed income mutual fund investment. Due to the short maturities on any instruments held, a hypothetical 10% increase or decrease in interest rates would not have a material impact on our financial position, results of operations or cash flows.

Item 8. Financial Statements and Supplementary Data

See the consolidated financial statements filed as part of this Annual Report on Form 10-K as listed under Item 15 below, which are incorporated by reference herein.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

Not Applicable.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, with the participation and supervision of our Chief Executive Officer and Chief Financial Officer, is responsible for our disclosure controls and procedures pursuant to Rules 13a-15(e) and 15d-15(e) under the Exchange Act. Disclosure controls and procedures are controls and other procedures that are designed to ensure that information required to be disclosed in our reports filed or submitted under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified under SEC rules and forms. Disclosure controls and procedures include controls and procedures designed to ensure that information required to be disclosed in our reports filed under the Exchange Act is accumulated and communicated to our principal executive officer and our principal financial officer, as appropriate, to allow timely decisions regarding required disclosure. We design our disclosure controls and procedures to ensure, at reasonable assurance levels, that such information is timely recorded, processed, summarized and reported, and then accumulated and communicated appropriately.

Based on an evaluation of our disclosure controls and procedures as of December 31, 2019, our Chief Executive Officer and Chief Financial Officer concluded that, as of such date, our disclosure controls and procedures were effective at reasonable assurance levels.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with GAAP.

Management assessed the effectiveness of our internal controls over financial reporting as of December 31, 2019. Management based its assessment on criteria established in the *Internal Control — Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework). Management's assessment included evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies, and our overall control environment.

Based on this assessment under the criteria set forth in the *Internal Control — Integrated Framework*, management has concluded that our internal control over financial reporting was effective as of December 31, 2019.

Our internal control over financial reporting as of December 31, 2019 has been audited by Grant Thornton LLP, an independent registered public accounting firm, as stated in their respective report which is included herein.

Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting that occurred during the fiscal quarter ended December 31, 2019 that has materially affected, or is reasonably likely to materially affect our internal control over financial reporting.

Inherent Limitations of Internal Controls

Notwithstanding the foregoing, our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures or our internal controls will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the company have been detected. These inherent limitations include the realities that judgments in decision-making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the control. The design of any system of controls also is based in part upon certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, control may become inadequate because of changes in conditions, or the degree of compliance with the policies or procedures may deteriorate. Because of the inherent limitations in a cost-effective control system, misstatements due to error or fraud may occur and not be detected.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
LeMaitre Vascular, Inc.

Opinion on internal control over financial reporting
We have audited the internal control over financial reporting of LeMaitre Vascular, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the consolidated financial statements of the Company as of and for the year ended December 31, 2019, and our report dated March 11, 2020 expressed an unqualified opinion on those financial statements.

Basis for opinion
The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and limitations of internal control over financial reporting
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ GRANT THORNTON LLP

Boston, Massachusetts
March 11, 2020

Item 9B. Other Information

Not Applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information responsive to this item is incorporated by reference herein from the information to be contained in the sections entitled “Directors, Executive Officers and Key Employees,” “Corporate Governance,” and “Meetings and Committees of the Board of Directors” in our 2020 definitive proxy statement (2020 Definitive Proxy Statement) for the 2020 annual meeting of stockholders to be filed with the Securities and Exchange Commission within 120 days after the fiscal year ended December 31, 2019.

The information required by this item concerning compliance with Section 16(a) of the Exchange Act is incorporated herein by reference from the information contained in the section entitled “Delinquent Section 16(a) Reports” in our 2020 Definitive Proxy Statement, to the extent required to be included.

Code of Ethics

Certain documents relating to our corporate governance, including our Code of Business Conduct and Ethics, which is applicable to our directors, officers, and employees, and the charters of the Audit Committee, Compensation Committee, and Corporate Governance and Nominating Committee of our Board of Directors, are available on our website at *http://www.lemaitre.com*. We intend to disclose substantive amendments to or waivers (including implicit waivers) of any provision of the Code of Business Conduct and Ethics that apply to our principal executive officer, principal financial officer, principal accounting officer, or controller, or persons performing similar functions, by posting such information on our website available at *http://www.lemaitre.com.*

Item 11. Executive Compensation

The information responsive to this item is incorporated herein by reference from the information to be contained in the section entitled “Compensation of Executive Officers and Directors” in our 2020 Definitive Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information responsive to this item is incorporated herein by reference from the information to be contained in the section entitled “Security Ownership of Certain Beneficial Owners and Management” in our 2020 Definitive Proxy Statement.

Equity Compensation Plan Information

The following table sets forth information regarding our equity compensation plans in effect as of December 31, 2019. Each of our equity compensation plans is an “employee benefit plan” as defined by Rule 405 of Regulation C of the Securities Act of 1933, as amended.

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans, excluding securities reflected in column (a)
	(a)	(b)	(c)
Equity compensation plans approved by security holders	1,235,775	$ 23.64	1,089,749
Equity compensation plans not approved by security holders	-	-	-
Total	1,235,775	$ 23.64	1,089,749

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required responsive to this item is incorporated herein by reference from the information to be contained in the sections entitled "Certain Relationships and Related Transactions" and "Corporate Governance" in our 2020 Definitive Proxy Statement.

Item 14. Principal Accounting Fees and Services

The information responsive to this item is incorporated herein by reference from the information to be contained in the sections entitled "Ratification of Independent Registered Public Accounting Firm" and "Additional Information Regarding Our Independent Registered Public Accounting Firm" in our 2020 Definitive Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

a) Documents filed as part of this Report.

(1) The following consolidated financial statements are filed herewith in Item 8 of Part II above.

(i) Report of Independent Registered Public Accounting Firm

(ii) Consolidated Balance Sheets

(iii) Consolidated Statements of Operations

(iv) Consolidated Statements of Changes in Stockholders' Equity

(v) Consolidated Statements of Comprehensive Income

(vi) Consolidated Statements of Cash Flows

(vii) Notes to Consolidated Financial Statements

(2) All financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto.

(3) Exhibits

		Incorporated By Reference			
Exhibit Number	**Exhibit Description**	**Form**	**Date**	**SEC File Number**	**Filed Herewith**
2.1	Asset Purchase Agreement dated November 10, 2016 between the Registrant, Restore Flow Allografts, LLC and certain individuals named therein.	10-K	3/9/18	001-33092	
2.2	Asset Purchase Agreement dated September 20, 2018 between the Registrant and Applied Medical Resources Corporation	10-Q	11/28/2018	001-33092	
2.3^	Asset Purchase Agreement dated October 11, 2019 between the Registrant and Admedus Ltd and certain of its subsidiaries				X
3.1	Amended and Restated By-laws of the Registrant	S-1/A	5/26/06	333-133532	
3.2	Second Amended and Restated Certificate of Incorporation of the Registrant	10-K	3/29/10	001-33092	
3.3	Amendment to Second Amended and Restated Certificate of Incorporation of the Registrant	8-K	6/15/12	001-33092	
4.1	Specimen Certificate evidencing shares of common stock	S-1/A	6/22/06	333-133532	

Exhibit Number	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Date	SEC File Number	
4.2	Description of Securities Registered pursuant to Section 12 of the Securities Exchange Act of 1934, as amended				X
10.1	Northwest Park Lease dated March 31, 2003, by and between the Registrant and Roger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, as amended	S-1	4/25/06	333-133532	
10.2	Director Compensation Policy	10-K	3/27/12	001-33092	
10.3†	Executive Retention and Severance Agreement dated October 10, 2005, by and between the Registrant and George W. LeMaitre	S-1/A	5/26/06	333-133532	
10.4†	Employment Agreement dated June 20, 2006, by and between the Registrant and David Roberts	S-1/A	6/22/06	333-133532	
10.5†	Employment Agreement dated April 20, 2006, by and between the Registrant and Joseph P. Pellegrino	S-1/A	6/22/06	333-133532	
10.6†	Form of Indemnification Agreement between the Registrant and its directors and executive officers	S-1/A	5/26/06	333-133532	
10.7	Second Amendment of Lease dated May 21, 2007, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	8-K	6/15/07	001-33092	
10.8	Third Amendment of Lease dated February 26, 2008, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	8-K	4/10/08	001-33092	
10.9	Fourth Amendment of Lease dated October 31, 2008, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	10-K	3/31/09	001-33092	
10.10†	First Amendment to Executive Retention and Severance Agreement dated December 23, 2008, by and between the Registrant and George W. LeMaitre	10-K	3/31/09	001-33092	
10.11†	First Amendment to Employment Agreement dated December 19, 2008, by and between the Registrant and David Roberts	10-K	3/31/09	001-33092	
10.12†	First Amendment to Employment Agreement dated December 19, 2008, by and between the Registrant and Joseph P. Pellegrino	10-K	3/31/09	001-33092	
10.13	Fifth Amendment of Lease dated March 23, 2010, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	10-K	3/29/10	001-33092	

Exhibit Number	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Date	SEC File Number	
10.14	Northwest Park Lease dated March 23, 2010, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	10-K	3/29/10	001-33092	
10.15	First Amendment to Northwest Park Lease dated September 14, 2010, by and between Rodger P. Nordblom and Peter C. Nordblom, as Trustees of Northwest Associates, and Registrant	10-K	3/27/12	001-33092	
10.16	Second Amendment to Northwest Park Lease dated October 31, 2011, by and between NWP Building 4 LLC, as successor-in-interest to Trustees of Northwest Associates, and Registrant	10-K	3/27/12	001-33092	
10.17	Third Amendment of Northwest Park Lease dated August 31, 2012, by and between NWP Building 4 LLC, as successor-in-interest to Trustees of Northwest Associates, and Registrant	10-K	3/27/13	001-33092	
10.18	Lease dated December 20, 2013, by and between N.W. Building 3 Trust and Registrant	8-K	12/23/13	001-33092	
10.19	Fourth Amendment of Lease dated December 20, 2013, by and between NWP Building 4 LLC, as successor-in-interest to the Trustees of Northwest Associates, and Registrant	8-K	12/23/13	001-33092	
10.20	Sixth Amendment of Lease dated December 20, 2013, by and between NWP Building 5 LLC, as successor-in-interest to the Trustees of Northwest Associates, and Registrant	8-K	12/23/13	001-33092	
10.21†	Amended and Restated Management Incentive Compensation Plan	8-K	2/25/14	001-33092	
10.22†	Third Amended and Restated 2006 Stock Option and Incentive Plan	8-K	6/8/15	001-33092	
10.23†	Separation Agreement dated June 7, 2017 between Peter R. Gebauer and LeMaitre Vascular GmbH	10-Q	8/3/2017	001-33092	
10.24†	Transition and Employment Agreement dated June 7, 2017 between Peter R. Gebauer and the Registrant	10-Q	8/3/2017	001-33092	
10.25†	Form of Restricted Stock Unit Award Agreement under the LeMaitre Vascular, Inc. 2006 Stock Option And Incentive Plan	10-K	3/9/18	001-33092	
10.26†	Form of Incentive Stock Option Agreement under the LeMaitre Vascular, Inc. 2006 Stock Option And Incentive Plan	10-K	3/9/18	001-33092	
10.27†	Form of Non-Qualified Stock Option Agreement (Employees) under the LeMaitre Vascular, Inc. 2006 Stock Option And Incentive Plan	10-K	3/9/18	001-33092	
10.28	Form of Non-Qualified Stock Option Agreement (Non-Employee Directors) under the LeMaitre Vascular, Inc. 2006 Stock Option And Incentive Plan	10-K	3/9/18	001-33092	
10.29	Asset Purchase Agreement between the Registrant and Specialty Surgical Instrumentation, Inc. dated April 5, 2018.	10-Q	5/4/2018	001-33092	
10.30^	License Agreement dated October 11, 2019 between the Registrant and Admedus Ltd and certain of its subsidiaries				X
10.31	First Amendment of Lease dated October 29, 2019 between NWP BUILDING 3 LLC and the Registrant	8-K	11/1/2019	001-33092	
10.32	Fifth Amendment of Lease dated October 29, 2019 between NWP BUILDING 4 LLC and the Registrant	8-K	11/1/2019	001-33092	

Exhibit Number	Exhibit Description	Incorporated By Reference			Filed Herewith
		Form	Date	SEC File Number	
10.33	Seventh Amendment of Lease dated October 29, 2019 between NWP BUILDING 5 LLC and the Registrant	8-K	11/1/2019	001-33092	
10.34	Lease dated November 26, 2019 between NWP Retail 18 LLC and the Registrant.	8-K	12/3/2019	001-33092	
21.1	List of Subsidiaries				X
23.1	Consent of Grant Thornton LLP				X
24.1	Power of Attorney (included on the Signatures page of this Annual Report on Form 10-K)				X
31.1	Certification of Chief Executive Officer, as required by Rule 13a-14(a) or Rule 15d-14(a)				X
31.2	Certification of Chief Financial Officer, as required by Rule 13a-14(a) or Rule 15d-14(a)				X
32.1*	Certification of Chief Executive Officer, as required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 36 of Title 18 of the United States Code (18 U.S.C. §1350)				X
32.2*	Certification of Chief Financial Officer, as required by Rule 13a-14(b) or Rule 15d-14(b) and Section 1350 of Chapter 36 of Title 18 of the United States Code (18 U.S.C. §1350)				X
101.INS	Inline XBRL Instance Document.				X
101.SCH	Inline XBRL Taxonomy Extension Schema Document.				X
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.				X
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.				X
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.				X
101.PRE	Inline XRBL Taxonomy Extension Presentation Linkbase Document.				X

† Indicates a management contract or any compensatory plan, contract, or arrangement.

* The certifications attached as Exhibit 32.1 and 32.2 that accompany this Annual Report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of LeMaitre Vascular, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date of this Form 10-K, irrespective of any general incorporation language contained in such filing.

^ Portions of the exhibit (indicated by "[***]") have been omitted because they are not material and would likely cause competitive harm to the Registrant if disclosed.

Item 16. Form 10-K Summary.

Not applicable.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized, on March 11, 2020.

LEMAITRE VASCULAR, INC.

By: /S/ GEORGE W. LEMAITRE
George W. LeMaitre,
Chief Executive Officer and Chairman of the Board

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints George W. LeMaitre and Joseph P. Pellegrino, Jr., and each of them, his true and lawful attorneys-in-fact and agents, with full power of substitution and resubstitution, for him and in his name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this report, and to file the same, with all exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or either of them, or their or his substitutes or substitute, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ GEORGE W. LEMAITRE **George W. LeMaitre**	Chief Executive Officer and Chairman of the Board *(Principal Executive Officer)*	March 11, 2020
/s/ JOSEPH P. PELLEGRINO, JR. **Joseph P. Pellegrino, Jr.**	Chief Financial Officer *(Principal Financial and Accounting Officer)* and Director	March 11, 2020
/s/ LAWRENCE J. JASINSKI **Lawrence J. Jasinski**	Director	March 11, 2020
/s/ JOHN J. O'CONNOR **John J. O'Connor**	Director	March 11, 2020
/s/ DAVID B. ROBERTS **David B. Roberts**	President and Director	March 11, 2020
/s/ JOHN A. ROUSH **John A. Roush**	Director	March 11, 2020

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
LeMaitre Vascular, Inc.

Opinion on the financial statements
We have audited the accompanying consolidated balance sheets of LeMaitre Vascular, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, changes in stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) ("PCAOB"), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in the 2013 *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO"), and our report dated March 11, 2020 expressed an unqualified opinion.

Change in accounting principle
As discussed in Note 1 to the consolidated financial statements, the Company has changed its method of accounting for leases as of January 1, 2019 due to the adoption of Accounting Standards Codification (ASC) Topic 842, *Leases*.

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

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

/s/ GRANT THORNTON LLP
We have served as the Company's auditor since 2015.

Boston, Massachusetts
March 11, 2020

LeMaitre Vascular, Inc.
Consolidated Balance Sheets

	December 31, 2019	December 31, 2018
	(in thousands, except share data)	
Assets		
Current assets:		
Cash and cash equivalents	$ 11,786	$ 26,318
Short-term marketable securities	20,895	21,668
Accounts receivable, net of allowances of $522 at December 31, 2019, and $399 at December 31, 2018	16,572	15,721
Inventory and other deferred costs	39,527	27,388
Prepaid expenses and other current assets	3,312	2,922
Total current assets	92,092	94,017
Property and equipment, net	14,854	14,102
Right-of-use leased assets	15,208	-
Goodwill	39,951	29,868
Other intangibles, net	24,893	13,692
Deferred tax assets	1,084	1,215
Other assets	259	194
Total assets	$ 188,341	$ 153,088
Liabilities and stockholders' equity		
Current liabilities:		
Accounts payable	$ 2,604	$ 1,732
Accrued expenses	14,014	15,847
Acquisition-related obligations	2,476	2,179
Lease liabilities - short-term	1,757	-
Total current liabilities	20,851	19,758
Lease liabilities - long-term	13,955	-
Deferred tax liabilities	1,179	484
Other long-term liabilities	4,215	2,611
Total liabilities	40,200	22,853
Stockholders' equity:		
Preferred stock, $0.01 par value; authorized 3,000,000 shares; none outstanding	-	-
Common stock, $0.01 par value; authorized 37,000,000 shares; issued 21,678,927 shares at December 31, 2019, and 21,110,224 shares at December 31, 2018	217	211
Additional paid-in capital	105,934	98,442
Retained earnings	57,029	45,831
Accumulated other comprehensive loss	(4,007)	(3,900)
Treasury stock, at cost; 1,522,035 shares at December 31, 2019 and 1,501,511 shares at December 31, 2018	(11,032)	(10,349)
Total stockholders' equity	148,141	130,235
Total liabilities and stockholders' equity	$ 188,341	$ 153,088

See accompanying notes to consolidated financial statements.

LeMaitre Vascular, Inc.
Consolidated Statements of Operations

	Year ended December 31,		
	2019	**2018**	**2017**
	(in thousands, except per share data)		
Net sales	$ 117,232	$ 105,568	$ 100,867
Cost of sales	37,379	31,629	30,170
Gross profit	79,853	73,939	70,697
Sales and marketing	30,339	27,318	25,948
General and administrative	19,055	17,689	17,010
Research and development	9,276	8,197	6,636
Gain on divestitures and acquisitions	-	(7,474)	-
Total operating expenses	58,670	45,730	49,594
Income from operations	21,183	28,209	21,103
Other income (expense):			
Interest income	698	631	179
Interest expense	-	(2)	(21)
Foreign currency loss	(202)	(394)	(155)
Income before income taxes	21,679	28,444	21,106
Provision for income taxes	3,745	5,501	3,929
Net income	$ 17,934	$ 22,943	$ 17,177
Earnings per share of common stock:			
Basic	$ 0.91	$ 1.18	$ 0.91
Diluted	$ 0.88	$ 1.13	$ 0.86
Weighted-average shares outstanding:			
Basic	19,813	19,426	18,961
Diluted	20,326	20,242	20,033
Cash dividends declared per common share	$ 0.34	$ 0.28	$ 0.22

See accompanying notes to consolidated financial statements.

LeMaitre Vascular, Inc.
Consolidated Statements of Comprehensive Income

	Year ended December 31,		
	2019	**2018**	**2017**
		2018	
Net income	$ 17,934	$ 22,943	$ 17,177
Other comprehensive income (loss):			
Foreign currency translation adjustment, net	(234)	(1,626)	2,294
Unrealized gain (loss) on short-term marketable securities	127	15	-
Total other comprehensive income (loss)	(107)	(1,611)	2,294
Comprehensive income	$ 17,827	$ 21,332	$ 19,471

See accompanying notes to consolidated financial statements.

LeMaitre Vascular, Inc.
Consolidated Statements of Stockholders' Equity
(in thousands, except share data)

	Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Treasury Stock		Total Stockholders' Equity
	Shares	Amount				Shares	Amount	
Balance at December 31, 2016	20,040,348	$ 200	$ 85,378	$ 15,335	$ (4,583)	1,452,810	$ (8,830)	$ 87,500
Net income				17,177				17,177
Other comprehensive income					2,294			2,294
Issuance of common stock for stock options exercised	635,503	7	5,493					5,500
Vested restricted stock units	69,190	-	-					-
Stock-based compensation expense			2,256					2,256
Repurchase of common stock at cost						27,291	(778)	(778)
Common stock cash dividend paid				(4,179)				(4,179)
Balance at December 31, 2017	20,745,041	$ 207	$ 93,127	$ 28,333	$ (2,289)	1,480,101	$ (9,608)	$ 109,770
Net income				22,943				22,943
Other comprehensive income					(1,611)			(1,611)
Issuance of common stock for stock options exercised	303,379	4	2,966					2,970
Vested restricted stock units	61,804	-	-					-
Stock-based compensation expense			2,349					2,349
Repurchase of common stock at cost						21,410	(741)	(741)
Common stock cash dividend paid				(5,445)				(5,445)
Balance at December 31, 2018	21,110,224	211	98,442	45,831	(3,900)	1,501,511	(10,349)	130,235
Net income				17,934				17,934
Other comprehensive income					(107)			(107)
Issuance of common stock for stock options exercised	509,693	6	4,850					4,856
Vested restricted stock units	59,010	-	-					-
Stock-based compensation expense			2,642					2,642
Repurchase of common stock at cost						20,524	(683)	(683)
Common stock cash dividend paid				(6,736)				(6,736)
Balance at December 31, 2019	21,678,927	217	105,934	57,029	(4,007)	1,522,035	(11,032)	148,141

See accompanying notes to consolidated financial statements.

LeMaitre Vascular, Inc.
Consolidated Statements of Cash Flows

	Year ended December 31,		
	2019	**2018**	**2017**
		(in thousands)	
Operating activities			
Net income	$ 17,934	$ 22,943	$ 17,177
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	5,416	4,324	4,055
Stock-based compensation	2,642	2,349	2,256
Fair value adjustments to contingent consideration obligations	171	(29)	106
Provision for doubtful accounts and allowances	388	264	230
Provision for inventory write-downs	747	671	396
Provision (benefit) for deferred income taxes	824	(2,152)	300
Gain on acquisitions and divestitures	-	(7,474)	-
Foreign currency transaction gain	(57)	259	(29)
Changes in operating assets and liabilities:			
Accounts receivable	(1,301)	(1,283)	(1,507)
Inventory and other deferred costs	(11,335)	(4,262)	(1,352)
Prepaid expenses and other assets	(654)	(418)	(288)
Accounts payable and other liabilities	(596)	4,314	1,524
Net cash provided by operating activities	14,179	19,506	22,868
Investing activities			
Purchases of property and equipment	(3,761)	(3,054)	(6,417)
Payments related to acquisitions	(21,240)	(12,282)	-
Purchases of short-term marketable securities	(22,699)	(19,619)	(22,541)
Proceeds from sales of marketable securities	23,600	20,500	-
Proceeds from divestitures	-	7,400	-
Net cash used in investing activities	(24,100)	(7,055)	(28,958)
Financing activities			
Payment of deferred acquisition consideration	(2,059)	(1,199)	(463)
Proceeds from issuance of common stock	4,856	2,969	5,500
Purchase of treasury stock	(683)	(741)	(778)
Common stock cash dividend paid	(6,736)	(5,445)	(4,179)
Net cash provided by (used in) financing activities	(4,622)	(4,416)	80
Effect of exchange rate changes on cash and cash equivalents	11	(813)	818
Net increase (decrease) in cash and cash equivalents	(14,532)	7,222	(5,192)
Cash and cash equivalents at beginning of year	26,318	19,096	24,288
Cash and cash equivalents at end of year	$ 11,786	$ 26,318	$ 19,096
Supplemental disclosures of cash flow information (see Note 12).			

See accompanying notes to consolidated financial statements.

LeMaitre Vascular, Inc.

Notes to Consolidated Financial Statements
December 31, 2019

1. Significant Accounting Policies and Related Matters

Description of Business

Unless the context requires otherwise, references to LeMaitre Vascular, we, our, and us refer to LeMaitre Vascular, Inc. and our subsidiaries. We develop, manufacture, and market medical devices and implants used primarily in the field of vascular surgery. We also derive revenues from the processing and cryopreservation of human tissues for implantation in patients. We operate in a single segment in which our principal product lines include the following: anastomotic clips, angioscopes, balloon catheters, biologic vascular grafts, biologic vascular patches, carotid shunts, polyester vascular grafts, powered phlebectomy devices, radiopaque marking tape, remote endarterectomy devices, surgical glue and valvulotomes. Our offices are located in Burlington, Massachusetts; Chandler, Arizona; Fox River Grove, Illinois; Vaughan, Canada; Hereford, England; Sulzbach, Germany; Milan, Italy; Madrid, Spain; Saint-Etienne, France; North Melbourne, Australia; Tokyo, Japan; Shanghai, China and Singapore.

Consolidation and Basis of Presentation

Our consolidated financial statements include the accounts of LeMaitre Vascular and the accounts of our wholly-owned subsidiaries, LeMaitre Vascular GmbH, LeMaitre Vascular GK, Vascutech Acquisition LLC, LeMaitre Acquisition LLC, LeMaitre Vascular SAS, LeMaitre Vascular S.r.l., LeMaitre Vascular Spain SL, LeMaitre Vascular Switzerland GmbH, LeMaitre Vascular ULC, LeMaitre Vascular AS, LeMaitre Vascular Pty Ltd, Bio Nova International Pty Ltd, LeMaitre Vascular, Ltd., LeMaitre Medical Technology (Shanghai) Co. Ltd, LeMaitre Cardial SAS and LeMaitre Vascular Singapore Pte Ltd. All significant intercompany accounts and transactions have been eliminated in consolidation.

Foreign Currency Translation

Balance sheet accounts of foreign subsidiaries are translated into U.S. dollars at year-end exchange rates. Operating accounts are translated at average exchange rates for each year. Net translation gains or losses are adjusted directly to a separate component of other comprehensive income (loss) within stockholders' equity. Foreign exchange transaction gains (losses), substantially all of which relate to intercompany activity between us and our foreign subsidiaries, are included in other income (expense) in the accompanying consolidated statements of operations.

Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles (GAAP) requires us to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Our estimates and assumptions, including those related to bad debts, inventory and other deferred costs, intangible assets, sales returns and discounts, and income taxes are reviewed on an ongoing basis and updated as appropriate. Actual results could differ from those estimates.

Revenue Recognition

Our revenue is derived primarily from the sale of disposable or implantable devices used during vascular surgery. We sell primarily directly to hospitals and to a lesser extent to distributors, as described below, and, during the periods presented in our consolidated financial statements, entered into consigned inventory arrangements with either hospitals or distributors on a limited basis. With the acquisition of the RestoreFlow allograft business, we also derive revenues from the processing and cryopreservation of human tissues for implantation in patients. These revenues are recognized when services have been provided and the tissue has been shipped to the customer, provided all other revenue recognition criteria discussed in the succeeding paragraph have been met.

On January 1, 2018 we adopted the provisions of ASU 2014-09, *Revenue from Contracts with Customers (Topic 606)*. We used the modified retrospective method of adoption under which the comparative information was not restated and will continue to be reported under the standard in effect for those periods. The adoption of this standard was not material to our financial statements and there was no cumulative effect adjustment to the opening balance of retained earnings required. The core principle of Topic 606 is that an entity should recognize revenue to depict the transfer of 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. The standard explains that to achieve the core principle, an entity should take the following actions:

Step 1: Identify the contract with a customer

Step 2: Identify the performance obligations in the contract

Step 3: Determine the transaction price

Step 4: Allocate the transaction price

Step 5: Recognize revenue when or as the entity satisfies a performance obligation

Revenue is recognized when or as a company satisfies a performance obligation by transferring a promised good or service to a customer (which is when the customer obtains control of that good or service). In instances in which shipping and handling activities are performed after a customer takes control of the goods (such as when title passes upon shipment from our dock), we have made the policy election allowed under Topic 606 to account for these activities as fulfillment costs and not as performance obligations.

We generally reference customer purchase orders to determine the existence of a contract. Orders that are not accompanied by a purchase order are confirmed with the customer either in writing or verbally. The purchase orders or similar correspondence, once accepted, identify the performance obligations as well as the transaction price, and otherwise outline the rights and obligations of each party. We allocate the transaction price of each contract among the performance obligations in accordance with the pricing of each item specified on the purchase order, which is in turn based on standalone selling prices per our published price lists. In cases where we discount products or provide certain items free of charge, we allocate the discount proportionately to all performance obligations, unless it can be demonstrated that the discount should be allocated entirely to one or more, but not all, of the performance obligations.

We recognize revenue, net of allowances for returns and discounts, fees paid to group purchasing organizations, and any sales and value added taxes required to be invoiced, which we have elected to exclude from the measurement of the transaction price as allowed by the standard, at the time of shipment (taking into consideration contractual shipping terms), or in the case of consigned inventory, when it is consumed. Shipment is the point at which control of the product and title passes to our customers, and at which LeMaitre Vascular has a present right to receive payment for the goods.

Below is a disaggregation of our revenue by major geographic area, which is among the primary categorizations used by management in evaluating financial performance, for the periods indicated (in thousands):

	Year ended December 31,	
	2019	**2018**
Americas	$ 69,359	$ 63,649
Europe, Middle East and Africa	$ 39,480	35,319
Asia/Pacific Rim	$ 8,393	6,600
Total	$ 117,232	$ 105,568

Except as discussed in Note 6, we do not carry any contract assets or contract liabilities, as there are generally no unbilled amounts due from customers under contracts for which we have partially satisfied performance obligations, or amounts received from customers for which we have not satisfied performance obligations. We satisfy our performance obligations under revenue contracts within a very short time period from receipt of the orders, and payments from customers are typically received within 30 to 60 days of fulfillment of the orders, except in certain geographies such as Spain and Italy where the payment cycle is customarily longer. Accordingly, there is no significant financing component to our revenue contracts. Additionally, we have elected as a policy that incremental costs (such as commissions) incurred to obtain contracts are expensed as incurred, due to the short-term nature of the contracts.

Customers returning products may be entitled to full or partial credit based on the condition and timing of the return. To be accepted, a returned product must be unopened (if sterile), unadulterated, and undamaged, must have at least 18 months remaining prior to its expiration date, or twelve months for our hospital customers in Europe, and generally be returned within 30 days of shipment. These return policies apply to sales to both hospitals and distributors. The amount of products returned to us, either for exchange or credit, has not been material. Nevertheless, we provide for an allowance for future sales returns based on historical return experience, which requires judgment. Our cost of replacing defective products has not been material and is accounted for at the time of replacement.

Research and Development Expense

Research and development costs, principally salaries, laboratory testing, and supplies, are expensed as incurred and also include royalty payments associated with licensed and acquired intellectual property.

Shipping and Handling Costs

Shipping and handling fees paid by customers are recorded within net sales, with the related expense recorded in cost of sales.

Advertising Costs

Advertising costs are expensed as incurred and are included as a component of sales and marketing expense in the accompanying consolidated statements of operations. Advertising costs are as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Advertising expense	$ 286	$ 299	$ 305

Cash and Cash Equivalents

We consider all highly liquid instruments purchased with maturity dates of 90 days or less to be cash equivalents. Cash and cash equivalents are primarily invested in money market funds. These amounts are stated at cost, which approximates fair value.

Short-term Marketable Securities

Our short-term marketable securities are available-for-sale securities carried at fair value, with unrealized gains and losses recorded in other comprehensive income.

Concentrations of Credit Risk

Our financial instruments that are exposed to concentrations of credit risk consist primarily of cash and cash equivalents and accounts receivable. Cash equivalents represent highly liquid investments with maturities of 90 days or less at the date of purchase. Credit risk related to cash and cash equivalents are limited based on the creditworthiness of the financial institutions at which these funds are held. We maintain cash balances in several banks. Accounts located in the United States are insured by the Federal Deposit Insurance Corporation (FDIC) up to $250,000. Certain of our account balances exceed the FDIC limit. Cash balances held outside the United States totaled approximately $9.0 million as of December 31, 2019.

Our accounts receivable are with customers based in the United States and internationally. Accounts receivable generally are due within 30 to 90 days of invoice and are stated at amounts due from customers, net of an allowance for doubtful accounts and sales returns, other than in certain European markets where longer payment terms are customary and may range from 90 to 240 days. We perform ongoing credit evaluations of the financial condition of our customers and adjust credit limits based upon payment history and the current creditworthiness of the customers, as determined by a review of their current credit information. We continuously monitor aging reports, collections, and payments from customers, and maintain a provision for estimated credit losses based upon historical experience and any specific customer collection issues we identify.

We closely monitor outstanding receivables for potential collection risks, including those that may arise from economic conditions, in both the U.S. and international economies. Our European sales to government-owned or supported customers such as hospitals, distributors and agents, in Southern Europe, specifically Italy and Spain may be subject to significant payment delays due to government austerity measures impacting funding and payment practices. As of December 31, 2019 our receivables in Italy and Spain totaled $1.0 million and $0.8 million, respectively. Receivables balances with certain publicly-owned hospitals and government supported customers in these countries can accumulate over a period of time and then subsequently be settled as large lump sum payments. While we believe our allowance for doubtful accounts in these countries is adequate as of December 31, 2019, if significant changes were to occur in the payment practices of these European governments or if government funding becomes unavailable, we may not be able to collect on receivables due to us from these customers and our write offs of uncollectible amounts may increase.

We write off accounts receivable when they become uncollectible. Such credit losses have historically been within our expectations and allowances. The allowance for doubtful accounts is our best estimate of the amount of probable credit losses in our existing accounts receivable. We review our allowance for doubtful accounts on a monthly basis and all past due balances are reviewed individually for collectability. The provision for the allowance for doubtful accounts is recorded in general and administrative expenses. The following is a summary of our allowance for doubtful accounts and sales returns:

	Balance at Beginning of Period	Additions (recoveries) charged to Income	Deductions from Reserves	Balance at End of Period
		(in thousands)		
Allowance for doubtful accounts and sales returns:				
Year ended December 31, 2019	$ 399	$ 388	$ 265	522
Year ended December 31, 2018	349	264	214	399
Year ended December 31, 2017	258	230	139	349

Fair Value of Financial Instruments

Our financial instruments include cash and cash equivalents, short-term marketable securities, accounts receivable and trade payables. The fair value of these instruments approximates their carrying value based upon their short-term nature or variable rates of interest. Unrealized gains and losses on our short-term marketable securities are recorded in other comprehensive income and were not material to our consolidated financial statements for the year ended December 31, 2019.

Inventory and Other Deferred Costs

Inventory and Other Deferred Costs consists of finished products, work-in-process, raw materials and costs deferred in connection with human tissue cryopreservation services of our RestoreFlow allograft business. We value inventory and other deferred costs at the lower of cost or market value. Cost includes materials, labor and manufacturing overhead and is determined using the first-in, first-out (FIFO) method. On a quarterly basis, we review inventory quantities on hand and analyze the provision for excess and obsolete inventory based primarily on product expiration dating and our estimated sales forecast, which is based on sales history and anticipated future demand. Our estimates of future product demand may not be accurate, and we may understate or overstate the provision required for excess and obsolete inventory. Accordingly, any significant unanticipated changes in demand could have a significant impact on the value of our inventory and results of operations.

Property and Equipment

Property and equipment are recorded at cost. Depreciation is provided over the estimated useful lives of the related assets using straight-line method as follows:

Description	Useful Life (Years)
Computers and equipment	3 – 5
Machinery and equipment	3 – 10
Leasehold improvements	The shorter of its useful life or lease term

Expenditures for maintenance and repairs are charged to operations when incurred, while additions and betterments are capitalized. When assets are retired or disposed, the asset's original cost and related accumulated depreciation are eliminated from the accounts and any gain or loss is reflected in the statement of operations.

Valuation of Business Combinations

We assign the value of the consideration transferred to acquire a business to the tangible assets and identifiable intangible assets acquired and liabilities assumed on the basis of their fair values at the date of acquisition. We assess the fair value of assets, including intangible assets, using a variety of methods and are usually performed by an independent appraiser who measures fair value from the perspective of a market participant.

Acquisitions have been accounted for using the acquisition method, and the acquired companies' results have been included in the accompanying consolidated financial statements from their respective dates of acquisition. Acquisition transaction costs have been recorded in general and administrative expenses, and are expensed as incurred. Allocation of the purchase price for acquisitions is based on estimates of the fair value of the net assets acquired and, for acquisitions completed within the past year, is subject to adjustment upon finalization of the purchase price allocation.

Our acquisitions have historically been made at prices above the fair value of the acquired assets, resulting in goodwill, due to expectations of synergies of combining the businesses. These synergies include use of our existing commercial infrastructure to expand sales of the acquired businesses' products, use of the commercial infrastructure of the acquired businesses to cost-effectively expand sales of our products, and the elimination of redundant facilities, functions and staffing.

Contingent Consideration

Contingent consideration for acquisitions is recognized at the date of acquisition, based on the fair value at that date, and then re-measured periodically through adjustments to net income.

Impairment of Long-lived Assets

We review our long-lived assets (primarily property and equipment and intangible assets) subject to amortization quarterly to determine if any adverse conditions exist or a change in circumstances has occurred that would indicate impairment or a change in the remaining useful life. Conditions that may indicate impairment include, but are not limited to, a significant adverse change in legal factors or business climate that could affect the value of an asset, a product recall, or an adverse action or assessment by a regulator. If an impairment indicator exists, we test the intangible asset for recoverability. We record impairment losses on long-lived assets used in operations when events and circumstances indicate that the assets might be impaired and the undiscounted cash flows estimated to be generated by those assets are less than the carrying amount of those assets. Impairment is measured based on the fair market value of the affected asset using discounted cash flows.

Goodwill

Goodwill represents the amount of consideration paid in connection with business acquisitions in excess of the fair value of assets acquired and liabilities assumed. Goodwill is evaluated for impairment annually or more frequently if indicators of impairment are present or changes in circumstances suggest that an impairment may exist. We evaluate the December 31 balance of the carrying value of goodwill based on a single reporting unit annually. We perform an assessment of qualitative factors to determine if it is “more likely than not” that the fair value of our reporting unit is less than its carrying value as a basis for determining whether it is necessary to perform the two-step goodwill impairment test. The “more likely than not” threshold is defined as having a likelihood of more than 50 percent. If required, the next step of the goodwill impairment test is to determine the fair value of the reporting unit. The implied fair value of goodwill is determined on the same basis as the amount of goodwill recognized in connection with a business combination. Specifically, the fair value of a reporting unit is allocated to all of the assets and liabilities (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination as of the date of the impairment review and as if the fair value of the reporting unit was the price paid to acquire the reporting unit. The excess of the fair value of a reporting unit over the amounts assigned to its assets and liabilities is the implied fair value of goodwill. If the carrying amount of the reporting unit goodwill exceeds the implied fair value of that goodwill, an impairment loss shall be recognized in an amount equal to that excess. We have determined that no goodwill impairment charges were required for the years ended December 31, 2019, 2018 or 2017.

Other Intangible Assets

Other intangible assets consist primarily of patents, trademarks, technology licenses, and customer relationships acquired in connection with business acquisitions and asset acquisitions and are amortized over their estimated useful lives, ranging from 2 to 16 years.

Stock-based Compensation

We recognize, as expense, the estimated fair value of stock options to employees which is determined using the Black-Scholes option pricing model. Share-based compensation charges are recorded across the consolidated statement of operations based upon the grantee’s primary function. We have elected to recognize the compensation cost of all share-based awards on a straight-line basis over the vesting period of the award. In periods that we grant stock options, fair value assumptions are based on volatility, interest, dividend yield, and expected term over which the stock options will be outstanding. The computation of expected volatility is based on the historical volatility of the company’s stock. The interest rate for periods within the contractual life of the award is based on the U.S. Treasury risk-free interest rate in effect at the time of grant. Historical data on exercise patterns is the basis for estimating the expected life of an option. The expected annual dividend rate was calculated by dividing our annual dividend, based on the most recent quarterly dividend rate, by the closing stock price on the grant date.

We also issue restricted stock units (RSUs) as an additional form of equity compensation to our employees, officers, and directors, pursuant to our stockholder-approved 2006 Plan. RSUs entitle the grantee to an issuance of stock at no cost and generally vest over a period of time determined by our Board of Directors at the time of grant based upon the continued service to the company. The fair market value of the award is determined based on the number of RSUs granted and the market value of our common stock on the grant date and is amortized to expense over the period of vesting. Unvested RSUs are forfeited and canceled as of the date that employment or service to the company terminates. RSUs are settled in shares of our common stock upon vesting. We typically repurchase common stock upon our employees’ vesting in RSUs in order to cover any minimum tax withholding liability as a result of the RSUs having vested.

Commitments and Contingencies

In the normal course of business, we are subject to proceedings, lawsuits, and other claims and assessments for matters related to, among other things, patent infringement, business acquisitions, employment, commercial matters and product recalls. We assess the likelihood of any adverse judgments or outcomes to these matters as well as potential ranges of probable losses. A determination of the amount of reserves required, if any, for these contingencies is made after careful analysis of each individual issue. The required reserves may change in the future due to new developments in each matter or changes in approach such as a change in settlement strategy in dealing with these matters. We record charges for the losses we anticipate incurring in connection with litigation and claims against us when we conclude a loss is probable and we can reasonably estimate these losses. During the years ended December 31, 2019, 2018 and 2017, we were not subject to any material litigation or claims and assessments.

Income Taxes

We account for income taxes under the asset and liability method of accounting for income taxes. Under the asset and liability method, deferred taxes are determined based on the difference between the financial reporting and tax bases of assets and liabilities using enacted tax rates in effect in the years in which the differences are expected to reverse. The provision for income taxes includes taxes currently payable and deferred taxes resulting from the tax effects of temporary differences between the financial statement and tax bases of assets and liabilities. We maintain valuation allowances where it is more likely than not that all or a portion of a deferred tax asset will not be realized. Changes in the valuation allowances are included in our tax provision in the period of change. In determining whether a valuation allowance is warranted, we evaluate factors such as prior earnings history, expected future earnings, carry-back and carry-forward periods and tax strategies that could potentially enhance the likelihood of the realization of a deferred tax asset.

We recognize, measure, present and disclose in our financial statements, uncertain tax positions that we have taken or expect to take on a tax return. We recognize in our financial statements the impact of tax positions that meet a “more likely than not” threshold, based on the technical merits of the position. The tax benefits recognized in the financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon ultimate settlement.

Our policy is to classify interest and penalties related to unrecognized tax benefits as income tax expense.

Comprehensive Income

Comprehensive income is defined as the change in equity of a business enterprise during a period from transactions and other events and circumstances from non-owner sources. Other than reported net income, comprehensive income includes foreign currency translation adjustments, which are disclosed in the accompanying consolidated statements of comprehensive income. There were no reclassifications out of comprehensive income for the years ended December 31, 2019, 2018 or 2017.

Accumulated other comprehensive loss consisted primarily of foreign currency translation adjustment losses of $4.0 million and $3.9 million as of December 31, 2019 and 2018, respectively.

Restructuring

We record restructuring charges incurred in connection with consolidation or relocation of operations, exited business lines, reductions in force, or distributor terminations. These restructuring charges, which reflect our commitment to a termination or exit plan that will begin within twelve months, are based on estimates of the expected costs associated with site closure, legal matters, contract terminations, severance payments, or other costs directly related to the restructuring. If the actual cost incurred exceeds the estimated cost, an additional charge to earnings will result. If the actual cost is less than the estimated cost, a credit to earnings will be recognized.

Earnings per Share

We compute basic earnings per share by dividing net income available for common stockholders by the weighted average number of shares outstanding during the year. Except where the result would be anti-dilutive to net income per share, diluted earnings per share has been computed using the treasury stock method and reflects the potential vesting of restricted common stock and the potential exercise of stock options, as well as their related income tax effects.

The computation of basic and diluted net income per share is as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands, except per share data)		
Basic:			
Net income available for common stockholders	$ 17,934	$ 22,943	$ 17,177
Weighted average shares outstanding	19,813	19,426	18,961
Basic earnings per share	$ 0.91	$ 1.18	$ 0.91
Diluted:			
Net income available for common stockholders	$ 17,934	$ 22,943	$ 17,177
Weighted-average shares outstanding	19,813	19,426	18,961
Common stock equivalents, if dilutive	513	816	1,072
Shares used in computing diluted earnings per common share	20,326	20,242	20,033
Diluted earnings per share	$ 0.88	$ 1.13	$ 0.86
Shares excluded in computing diluted earnings per share as those shares would be anti-dilutive	468	230	6

Recent Accounting Pronouncements

On January 1, 2019 we adopted the provisions of ASU No. 2016-02, *Leases (Topic 842)*, subsequently amended by ASU 2018-11, *Leases (Topic 842): Targeted Improvements*. Under the new guidance, we are required to recognize the following for all leases (with the exception of short-term leases) at the commencement date: a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term. As allowed by the standard, we elected to use the transition option not to apply the new lease standard to comparative periods but instead to recognize a cumulative-effect adjustment to retained earnings as of the date of adoption, January 1, 2019. Upon adoption of this standard, we recognized lease liabilities of $7.0 million and right-of-use assets in the amount of $6.5 million (net of the reversal of a previously recorded deferred rent liability of $0.5 million). There was no cumulative-effect adjustment to retained earnings required. Additional disclosures required under the new standard are included in Note 6 to these financial statements.

In June 2016, the FASB issued ASU 2016-13 Financial Instruments – Credit Losses (Topic 326), which requires a financial asset (or group of financial assets) measured at amortized cost to be presented at the net amount expected to be collected. The allowance for credit losses is a valuation account that is deducted from the amortized cost basis of the financial asset(s) to present the net carrying value at the amount expected to be collected on the financial asset. The measurement of expected credit losses is based on relevant information about past events, including historical experience, current conditions and reasonable, supportable forecasts that affect the collectability of the reported amount, and requires judgment in determining relevant information and estimation methods. The new standard is effective for us beginning January 1, 2020. The adoption of this standard is not expected to have a material impact on our financial statements, as the only financial assets we have that are affected by the standard are trade receivables for which we have historically employed a collectability estimation technique.

In August 2018, the FASB issued ASU 2018-13 Fair Value Measurement (Topic 820), which modifies the disclosure requirements for fair value measurements. The new standard is effective for us beginning January 1, 2020, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

In January 2017, the FASB issued ASU 2017-04 Intangibles – Goodwill and Other (Topic 350), which, among other provisions, eliminates "step 2" from the goodwill impairment test. The annual, or interim, goodwill impairment test will be performed by comparing the fair value of a reporting unit with its carrying amount. An impairment charge should be recognized for the amount by which the carrying amount exceeds the reporting unit's fair value; however, the loss recognized should not exceed the total amount of goodwill allocated to that reporting unit. The new standard is effective for us beginning January 1, 2020, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

In December 2019, the FASB issued ASU 2019-12 Income Taxes (Topic 740), which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740 as well as clarifying and amending other areas of existing GAAP under Topic 740. The new standard is effective for us beginning January 1, 2021, with early adoption permitted. The adoption of this standard is not expected to have a material impact on our financial statements.

2. Acquisitions and Divestitures

Acquisitions are accounted for using the acquisition method and the acquired businesses' results have been included in the accompanying consolidated financial statements from their respective dates of acquisition. In each case for the acquisitions disclosed below, pro forma information assuming the acquisition had occurred at the beginning of the earliest period presented is not included as the impact is immaterial.

Our acquisitions have historically been made at prices above the fair value of the acquired identifiable assets, resulting in goodwill, due to expectations of synergies that will be realized by combining businesses. These synergies include the use of our existing sales channel to expand sales of the acquired businesses' products, consolidation of manufacturing facilities, and the leveraging of our existing administrative infrastructure.

The fair market valuations associated with these transactions fall within Level 3 (see Note 13) of the fair value hierarchy, due to the use of significant unobservable inputs to determine fair value. The fair value measurements were calculated using unobservable inputs, primarily using the income approach, specifically the discounted cash flow method. The amount and timing of future cash flows within our analysis was based on our due diligence models, most recent operational budgets, long range strategic plans and other estimates.

CardioCel and VascuCel Biologic Patches

On October 11, 2019 (the Closing Date), we entered into an Asset Purchase Agreement (APA) to acquire the biologic patch business assets and a related technology license from Admedus Ltd and various of its subsidiaries (Admedus). The biologic patch business consists of the CardioCel and VascuCel product lines, which are manufactured in a manner intended to reduce the risk of calcification. The products are sold worldwide. On the same date, the parties entered into a Transition Services Agreement (TSA) under which Admedus will manufacture and supply LeMaitre with inventory for a period of up to three years, unless extended in writing by both parties. Revenues from the acquisition date through December 31, 2019 were $1.4 million.

Under the APA we agreed to pay Admedus a total of up to $15.3 million for the purchase of substantially all of its biologic patch business assets, other than specifically identified Excluded Assets, plus $8.0 million for the technology licenses. The acquired assets (in combination with the license) included inventory, intellectual property, permits and approvals, data and records, and customer and supplier information, as well as a small amount of machinery and equipment. At closing, $14.2 million of the purchase price was paid to Admedus. Shortly thereafter another $0.3 million was paid in connection with delivery of audited financial statements of the acquired business to LeMaitre. Additional consideration may be payable as follows:

- $0.7 million (the First Holdback) within 15 days following the first anniversary of the Closing Date;
- $0.7 million (the Second Holdback) within 15 days following the third anniversary of the Closing Date;
- $2.0 million (the Third Holdback) within 15 days following LMAT's receipt of a CE mark on all acquired products;
- $2.5 million if revenues in the first 12-month period following the Closing Date exceed $20 million, OR, $1.2 million if revenues in the first 12-month period following the Closing Date exceed $15 million;
- $2.5 million if revenues in the second 12-month period following the Closing Date exceed $30 million, OR, $1.2 million if revenues in the first 12-month period following the Closing Date exceed $22.5 million; and
- $0.5 million if by the first anniversary of the Closing Date Admedus extends the shelf life of the products from 36 months to at least 60 months

The following table summarizes the preliminary purchase price allocation:

	Allocated Fair Value
	(in thousands)
Inventory and other	$ 1,343
Intangible assets	8,725
Goodwill	7,344
Purchase price	$ 17,412

The goodwill results from expected synergies of combining the acquired products and customer information to our existing operations, and is deductible for tax purposes over 15 years.

The following table reflects the allocation of purchase consideration to the acquired intangible assets and related estimated useful lives:

	Allocated Fair Value	**Weighted Average Useful Life (years)**
	(in thousands)	
Customer relationships	$ 5,562	12.0
Intellectual property	2,335	8.0
Non-compete agreement	361	5.0
Tradenames	467	8.0
Total intangible assets	$ 8,725	

The weighted-average amortization period of the acquired intangible assets was 10.4 years.

Tru-Incise Valve Cutter

On July 12, 2019, we entered into an agreement with UreSil, LLC, an Illinois limited liability company, to purchase the remaining assets of their Tru-Incise valve cutter business, including distribution rights in the United States. We also entered into a transition services agreement under which UreSil, LLC will continue to manufacture the acquired products for us for a specified time, until we transition the full manufacturing process to our Burlington, Massachusetts facilities. Revenues from the acquisition date through December 31, 2019 were $0.8 million.

The purchase price for the acquired assets, which included inventory, machinery and equipment, intellectual property, and customer and supplier information, was $8.0 million. Of this amount, $6.8 million was paid at closing, with three follow-on payments $0.4 million each due on the first, second and third anniversaries of the closing date. The deferred amounts totaling $1.2 million were recorded at an acquisition-date fair value of $1.1 million using a discount rate of 4.19% to reflect the time value of money between the acquisition date and the payment due dates. There are no contingencies associated with these holdback payments, although they may be reduced for certain post-closing claims.

The following table summarizes the preliminary purchase price allocation:

	Allocated Fair Value
	(in thousands)
Inventory	$ 276
Equipmentand supplies	70
Intangible assets	4,844
Goodwill	2,748
Purchase price	$ 7,938

The goodwill results from expected synergies of combining the acquired products and customer information to our existing operations, and is deductible for tax purposes over 15 years.

The following table reflects the allocation of purchase consideration to the acquired intangible assets and related estimated useful lives:

	Allocated Fair Value	**Weighted Average Useful Life (years)**
	(in thousands)	
Customer relationships	$ 3,945	13.0
Intellectual property	563	7.0
Non-compete agreement	233	5.0
Tradenames	103	7.0
Total intangible assets	$ 4,844	

The weighted-average amortization period of the acquired intangible assets was 11.8 years.

Cardial

On October 22, 2018, through a newly created subsidiary LeMaitre Cardial SAS, we entered into an agreement to acquire the business assets of Cardial, a company located in Saint-Etienne, France and formerly owned by Becton, Dickinson and Company. The Cardial business consists of the manufacturing of polyester vascular grafts, valvulotomes and surgical glue. On the same date, the parties entered into a separate agreement notarial deed under which LeMaitre Cardial SAS purchased the building and land previously owned by Cardial.

The purchase price for the acquired assets, including the land and building, inventory, machinery and equipment, intellectual property, permits and approvals, data and records, and customer and supplier information, was €2.0 million ($2.3 million). At closing, €1.1 million ($1.3 million) was paid in cash, and €0.5 million ($0.5 million) of liabilities were assumed by LeMaitre Cardial SAS. Another €0.4 million ($0.4 million) is due in two installments, half to be paid twelve months after the closing date, and half eighteen months after the closing date. There are no contingencies associated with these holdback payments, although they may be reduced depending upon the final results of a reconciliation of the value of inventory transferred, as outlined in the agreement.

The following table summarizes the purchase price allocation:

	Allocated Fair Value
	(in thousands)
Inventory	€ 2,419
Land and building	750
Equipment and supplies	94
Intangible assets	623
Bargain purchase gain	(1,946)
Purchase price	€ 1,940

The bargain purchase gain was recorded to reflect the excess of the net assets acquired over the purchase price. We recorded deferred taxes on this gain of €0.5 million ($0.6 million), resulting in a net gain of €1.4 million ($1.6 million).

The following table reflects the allocation of purchase consideration to the acquired intangible assets and related estimated useful lives:

	Allocated Fair Value	**Weighted Average Useful Life (years)**
	(in thousands)	
Customer relationships	€ 250	16.0
Intellectual property	237	5.0
Non-compete agreement	46	5.0
Tradenames	90	5.0
Total intangible assets	€ 623	

The weighted-average amortization period of the acquired intangible assets was 9.4 years.

Applied Medical

On September 20, 2018, we entered into an agreement to acquire the assets of the embolectomy catheter business of Applied Medical Resources Corporation (Applied). The clot management business consists of several embolectomy and thrombectomy catheter product lines which are sold worldwide (approximately 60% in the U.S. and 40% outside the U.S.). On the same date, we entered into a transition services agreement under which Applied will manufacture and supply us with inventory for a period of twelve months, unless extended in writing by both parties.

The purchase price for the acquired assets, which included inventory, machinery and equipment, intellectual property, permits and approvals, data and records, and customer and supplier information, was $14.2 million. Of this amount, $11 million was paid at closing, another $2 million was paid 12 months following the closing date, and the final $1.2 million is due 24 months following the closing date. The deferred amounts totaling $3.2 million were recorded at an acquisition-date fair value of $3.043 million using a discount rate of 3.75% to reflect the time value of money between the acquisition date and the payment due dates.

The following table summarizes the purchase price allocation. The purchase accounting is complete:

	Allocated Fair Value
	(in thousands)
Inventory	$ 739
Equipment and supplies	416
Intangible assets	6,527
Goodwill	6,361
Purchase price	$ 14,043

The goodwill results from expected synergies of combining the acquired products and customer information to our existing operations, and is deductible for tax purposes over 15 years.

The following table reflects the allocation of purchase consideration to the acquired intangible assets and related estimated useful lives:

	Allocated Fair Value	**Weighted Average Useful Life (years)**
	(in thousands)	
Customer relationships	$ 4,475	16.0
Intellectual property	1,316	7.0
Non-compete agreement	530	5.0
Tradenames	206	7.0
Total intangible assets	$ 6,527	

The weighted-average amortization period of the acquired intangible assets was 13.0 years.

Reddick Divestiture

On April 5, 2018, we entered into an asset purchase agreement with Specialty Surgical Instrumentation, Inc. to sell the inventory, intellectual property and other assets associated exclusively with our Reddick cholangiogram catheter and Reddick-Saye screw product lines for $7.4 million. Concurrent with this divestiture we entered into a transition services agreement under which we will continue to manufacture and supply these products to the buyer for a period of up to two years unless extended by both parties, as well as a balloon supply agreement under which we will supply balloons, a component of the cholangiogram catheters, to the buyer for a period of up to six years unless extended by both parties. We recorded a gain in connection with these agreements of $5.9 million. The following table summarizes the allocation of consideration received:

	Allocated Fair Value
	(in thousands)
Inventory	$ 308
Deferred revenue - transition services agreement	1,081
Goodwill	135
Gain on divestiture	5,876
Consideration received	$ 7,400

Under the terms of the transition services agreement, we agreed to manufacture the Reddick products for the buyer at prices at or in some cases below our cost. We allocated a portion of the consideration received to this agreement to reflect it at fair value and recorded it as deferred revenue. As the products were sold to the buyer, we amortized a portion of the deferred revenue to adjust the gross margin on the sale to fair value on a specific identification basis. Additionally, as the Reddick product lines that were divested constituted a business, we allocated a portion of our goodwill to this divestiture based on the fair value of the business sold in relation to the fair value of the business that will be retained.

3. Inventory and Other Deferred Costs

Inventory and other deferred costs consists of the following:

	December 31, 2019	December 31, 2018
	(in thousands)	
Raw materials	$ 5,359	$ 4,085
Work-in-process	6,238	5,095
Finished products	23,032	16,391
Other deferred costs	4,898	1,817
Total inventory and other deferred costs	$ 39,527	$ 27,388

We had inventory on consignment at customer sites of $1.9 million and $1.7 million as of December 31, 2019 and 2018, respectively.

In connection with our RestoreFlow allograft business, other deferred costs include costs incurred for the preservation of human vascular tissues available for shipment, tissues currently in active processing, and tissues held in quarantine pending release to implantable status. By federal law, human tissues cannot be bought or sold. Therefore, the tissues we preserve are not held as inventory, and the costs we incur to procure and process vascular tissues are instead accumulated and deferred. These costs include fixed and variable overhead costs associated with the cryopreservation process, including primarily direct labor costs, tissue recovery fees, inbound freight charges, indirect materials and facilities costs. General and administrative expenses and selling expenses associated with the provision of these services are expensed as incurred.

4. Property and Equipment

Property and equipment consists of the following:

	As of December 31,	
	2019	2018
	(in thousands)	
Computers and equipment	$ 4,623	$ 4,077
Machinery and equipment	16,245	13,718
Building and leasehold improvements	11,758	11,651
Gross property and equipment	32,626	29,446
Less accumulated depreciation	(17,772)	(15,344)
Property and equipment, net	$ 14,854	$ 14,102

During the years ended December 31, 2019, 2018 and 2017 we wrote off fully depreciated assets with gross values of $0.5 million, $1.0 million and $0.2 million, respectively.

Depreciation expense is as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Depreciation expense	$ 2,979	$ 2,564	$ 2,266

5. Goodwill and Other Intangibles

Goodwill consists of the following:

	As of December 31,	
	2019	2018
Balance at beginning of year	$ 29,868	$ 23,844
Additions for acquisitions	10,092	6,361
Divestiture adjustment	-	(135)
Effects of currency exchange	(9)	(202)
Balance at end of year	$ 39,951	$ 29,868

Other intangibles consist of the following:

	December 31, 2019			December 31, 2018		
	Gross Carrying Value	Accumulated Amortization	Net Carrying Value	Gross Carrying Value	Accumulated Amortization	Net Carrying Value
	(in thousands)					
Product technology and intellectual property	$ 13,502	$ 5,722	$ 7,780	$ 11,728	$ 5,726	$ 6,002
Trademarks, tradenames and licenses	1,807	702	1,105	2,246	1,561	685
Customer relationships	18,215	3,364	14,851	10,065	3,806	6,259
Other intangible assets	1,725	568	1,157	2,145	1,399	746
Total identifiable intangible assets	$ 35,249	$ 10,356	$ 24,893	$ 26,184	$ 12,492	$ 13,692

These assets are being amortized over useful lives ranging from 2 to 16 years. The weighted-average amortization period for these intangibles as of December 31, 2019, is 10.1 years. Amortization expense is included in general and administrative expense and is as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Amortization expense	$ 2,437	$ 1,760	$ 1,790

During the year ended December 31, 2019 we wrote off fully amortized intangible assets with a gross values of $4.5 million. Estimated amortization expense for each of the next five fiscal years, based upon the intangible assets at December 31, 2019, is as follows:

	Year ended December 31,				
	2020	2021	2022	2023	2024
			(in thousands)		
Amortization expense	$ 3,224	$ 2,956	$ 2,751	$ 2,677	$ 2,477

6. Accrued Expenses and Other Long-term Liabilities

Accrued expenses consist of the following:

	December 31, 2019	December 31, 2018
	(in thousands)	
Compensation and related taxes	$ 8,550	$ 7,973
Income and other taxes	1,003	2,927
Professional fees	40	43
Deferred revenue	-	552
Other	4,421	4,352
Total	$ 14,014	$ 15,847

As discussed in Note 2 above, deferred revenue relates to our divestiture of the Reddick product line and an associated transition services agreement that we entered into contemporaneously with the divestiture, under which we agreed to manufacture and sell product to the buyer at prices at or below our cost. We allocated a portion of the consideration received from the divestiture to this transition services agreement to reflect it at fair value and recorded it as deferred revenue. As the products were sold to the buyer, we amortized a portion of the deferred revenue to adjust the gross margin on the sale to fair value on a specific identification basis. This arrangement is now complete. The following table summarizes the changes in the deferred revenue balance during the arrangement:

	As of December 31,	
	2019	2018
Beginning contract liability balance	$ 552	$ -
Deferred revenue recorded	-	1,081
Revenue recognized upon satisfaction of performace obligations in the period	(552)	(529)
Ending balance	$ -	$ 552

Other long-term liabilities consist of the following:

	December 31, 2019	December 31, 2018
	(in thousands)	
Acquisition-related liabilities	$ 3,268	$ 1,326
Deferred rent	-	530
Income taxes	781	559
Other	166	196
Total	$ 4,215	$ 2,611

7. Commitments and Contingencies

Leases

We conduct the majority of our operations in leased facilities, all of which are accounted for as operating leases, as they do not meet the criteria for finance leases. Our principal worldwide executive, distribution, and manufacturing operations are located at three adjacent 27,098 square foot, 27,289 square foot and 15,642 square foot leased facilities, as well as a fourth nearby 12,878 square foot leased facility, in Burlington, Massachusetts. In October 2019 we leased an additional 26,447 square foot building in the same area from the same landlord from whom we lease the other four buildings, and also extended the lease terms on the other four buildings. All five Burlington leases now expire in December 2030. In October 2019 we also leased a 2,258 square foot facility in Hereford, England to house our United Kingdom sales and distribution business. In addition, our international operations are headquartered at a 16,470 square foot leased facility located in Sulzbach, Germany, including approximately 3,630 square feet added in 2019, under a lease which expires in August 2023. This lease contains two five-year renewal options. We also have smaller long-term leased sales, marketing and other facilities located in Arizona, Japan, Canada, Australia, Singapore and China, and short-term leases in Italy, Spain and Illinois. Our lease in Canada contains a five-year renewal option exercisable in February 2023. Our leases in Germany and Australia are subject to periodic rent increases based on increases in the consumer price index as measured each September and May, respectively, with such increases applicable to the subsequent twelve months of lease payments. None of our noncancelable lease payments include non-lease components such as maintenance contracts; we generally reimburse the landlord for direct operating costs associated with the leased space. We have no subleases, and there are no residual value guarantees associated with, or restrictive covenants imposed by, any of our leases. There were no assets held under capital leases at December 31, 2019.

We also lease automobiles under operating leases in the U.S. as well as certain of our international subsidiaries. The terms of these leases are generally three years, with older vehicles replaced by newer vehicles from time to time.

As discussed above under Recent Accounting Pronouncements, on January 1, 2019 we adopted the provisions of ASU No. 2016-02, *Leases (Topic 842)*, subsequently amended by ASU 2018-11, *Leases (Topic 842): Targeted Improvements*. Under the new guidance, we are required to recognize the following for all leases (with the exception of short-term leases) at the commencement date: a lease liability, which is a lessee's obligation to make lease payments arising from a lease, measured on a discounted basis; and a right-of-use asset, which is an asset that represents the lessee's right to use, or control the use of, a specified asset for the lease term.

Our most significant judgment involved in determining the amounts to initially record as lease liabilities and right-of-use assets was the selection of a discount rate; because we have no debt we have no incremental borrowing rate to reference. We therefore estimated an incremental borrowing rate using quotes from potential lenders as the primary inputs, augmented by other available information. The resulting rate selected was 5.25%. We determined that it was appropriate to apply this single rate to our portfolio of leases worldwide, as the lease terms and conditions are substantially similar, and because we believe our subsidiaries would be unable to obtain borrowings on their own without a commitment of parent company support.

Additional information with respect to our leases is as follows:

	Year ended December 31, 2019 (in thousands)
Lease cost	
Operating lease cost	$ 1,756
Short-term lease cost	291
Total lease cost	$ 2,047
Other information	
Cash paid for amounts included in the measurement of operating lease liabilities	$ 1,858
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 10,571
Weighted average remaining lease term - operating leases (years)	8.3
Weighted average discount rate - operating leases	5.25%

At December 31, 2019, the minimum noncancelable operating lease rental commitments with initial or remaining terms of more than one year are as follows:

Year ending December 31,	
2020	$ 2,419
2021	2,351
2022	1,942
2023	1,686
2024	1,573
Thereafter	10,301
Adjustment to net present value as of December 31, 2019	(4,560)
Minimum noncancelable lease liability	$ 15,712

Purchase Commitments

As part of our normal course of business, we have commitments to purchase $1.5 million of inventory through 2019. The purchase commitments for inventory are to be used in operations over the normal course of business and do not represent excess commitments or loss contracts.

8. Income Taxes

Income (loss) before income taxes is as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
United States	$ 17,989	$ 22,256	$ 17,778
Foreign	3,690	6,188	3,328
Total	$ 21,679	$ 28,444	$ 21,106

Certain of our foreign subsidiaries are included in the U.S. tax return as branches but are included as foreign for purposes of the table above.

The provision (benefit) for income taxes is as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Current:			
Federal	$ 1,501	$ 4,262	$ 2,451
State	304	673	292
Foreign	1,116	2,718	886
	2,921	7,653	3,629
Deferred:			
Federal	538	(1,512)	(268)
State	144	(145)	390
Foreign	142	(495)	178
	824	(2,152)	300
Provision for income taxes	$ 3,745	$ 5,501	$ 3,929

We have reviewed the tax positions taken, or to be taken, in our tax returns for all tax years currently open to examination by a taxing authority. As of December 31, 2019, the gross amount of unrecognized tax benefits exclusive of interest and penalties was $0.8 million, which may increase within the twelve months ending December 31, 2020. We remain subject to examination until the statute of limitations expires for each respective tax jurisdiction. The statute of limitations will be open with respect to these tax positions through 2027. A reconciliation of beginning and ending amount of our unrecognized tax benefits is as follows:

	2019	2018	2017
		(in thousands)	
Unrecognized tax benefits at the beginning of year	$ 711	$ 525	$ 390
Additions for tax positions of current year	74	73	83
Additions for tax positions of prior years	63	113	57
Reductions for settlements with taxing authorities.	-	-	-
Reductions for lapses of the applicable statutes of limitations	-	-	(5)
Unrecognized tax benefits at the end of the year	$ 848	$ 711	$ 525

Deferred taxes are attributable to the following temporary differences:

	As of December 31,	
	2019	2018
	(in thousands)	
Deferred tax assets:		
Inventory	$ 840	$ 976
Net operating loss carryforwards	1,289	1,421
Tax credit carryforwards	944	828
Capital loss carryforwards	277	279
Reserves and accruals	787	802
Operating lease liabilities	3,343	-
Intangible assets	2,764	2,737
Stock options	342	373
Other	20	91
Total deferred tax assets	10,606	7,507
Deferred tax liabilities:		
Property and equipment	(1,520)	(1,416)
Goodwill	(3,459)	(3,023)
Operating lease right-of-use assets	(3,224)	-
Foreign branch deferred offset	(923)	(1,032)
Other	(187)	(50)
Total deferred tax liabilities	(9,313)	(5,521)
Net deferred tax assets before valuation allowance	1,293	1,986
Valuation allowance	(1,388)	(1,255)
Net deferred tax liabiltity	$ (95)	$ 731
Deferred tax classification		
Long-term deferred tax asset	$ 1,084	$ 1,215
Long-term deferred tax liability	(1,179)	(484)
Net long-term deferred tax liability	$ (95)	$ 731

In 2017, we increased our valuation by a net $0.2 million mainly attributable to Massachusetts credit carryforwards. In 2018, we decreased our valuation allowance by a net $0.7 million mainly attributable to Australian net operating loss and capital loss carry forwards that are now expected to be realized. In 2019, we increased our valuation allowance by $0.1 million mainly attributable to Australian net operating loss carry forwards and Massachusetts credit carryforwards.

As of December 31, 2019, we have provided a valuation allowance of $1.4 million for deferred tax assets primarily related to Australian net operating loss and capital loss carry forwards and Massachusetts tax credit carry forwards that are not expected to be realized. The valuation allowance against our deferred tax assets may require adjustment in the future based on changes in the mix of temporary differences, changes in tax laws, and operating performance.

Realization of our deferred tax assets is dependent on our generating sufficient taxable income in future periods. Although we believe it is more likely than not that future taxable income will be sufficient to allow us to recover substantially all of the value of our deferred tax assets remaining after we apply the valuation allowances, realization is not assured and future events could cause us to change our judgment. In the event that actual results differ from our estimates, or we adjust these estimates in the future periods, further adjustments to our valuation allowance may be recorded, which could materially impact our financial position and net income (loss) in the period of the adjustment.

As of December 31, 2019, we have net operating loss carryforwards in Australia of $1.2 million that do not expire, in France of $2.5 million that do not expire, in Spain of $0.9 million that do not expire, and in Norway of $0.1 million that do not expire. We have a capital loss carryforward in Australia of $0.9 million that does not expire. We also have state tax credit carryforwards of approximately $1.5 million that are available to reduce future tax liabilities, which begin to expire in 2021, or can be carried forward indefinitely.

In December 2018, we reevaluated our international operations and as a result, are no longer indefinitely reinvested with respect to undistributed earnings from our German and Australian subsidiaries. There was no material deferred tax expense recorded for foreign and state tax costs associated with the future remittance of these undistributed earnings. We remain permanently reinvested with respect to undistributed earnings from our other foreign subsidiaries. It is not practicable to estimate the amount of deferred tax liability, if any, with respect to these permanently reinvested undistributed earnings.

A reconciliation of the federal statutory rate to our effective tax rate is as follows:

	2019	2018	2017
Federal statutory rate	21.0%	21.0%	35.0%
State tax, net of federal benefit	1.9%	1.4%	1.7%
Effect of foreign taxes	2.1%	3.8%	(0.6%)
Federal tax on foreign income	0.8%	1.4%	1.7%
Valuation allowance	0.6%	(3.2%)	0.1%
Foreign deferred tax liability offset	(0.4%)	(0.3%)	(0.2%)
Manufacturing deduction	0.0%	0.0%	(1.5%)
Research & development tax credits	(1.2%)	(0.7%)	(0.6%)
Stock options	(8.8%)	(3.3%)	(15.8%)
Uncertain tax positions	1.0%	0.8%	0.6%
Other permanent differences	0.5%	(0.7%)	1.0%
Change in tax laws	0.0%	0.0%	2.9%
Deferred tax remeasurement	0.0%	0.0%	(5.0%)
Other	(0.2%)	(0.9%)	(0.7%)
Effective tax rate	17.3%	19.3%	18.6%

In August 2018, the German tax authority commenced an audit of our German subsidiary for the tax years 2013 through 2016. We expect to conclude this audit in early 2020 and pay an immaterial amount of additional German tax. We are not currently under audit in any other tax jurisdictions.

As of December 31, 2019, a summary of the tax years that remain subject to examination in our most significant tax jurisdictions are:

United States	2016 and forward
Foreign	2012 and forward

9. Stockholders' Equity

Authorized Shares

Our certificate of incorporation, as amended and restated from time to time, authorizes the issuance of up to 37,000,000 shares of common stock and up to 3,000,000 shares of undesignated preferred stock.

Under the terms of our certificate of incorporation, our board of directors is authorized to issue shares of the preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. Currently, we have no shares of preferred stock outstanding.

Stock Award Plans

In May 2006 we approved a 2006 Stock Option and Incentive Plan (as subsequently amended, the 2006 Plan), which became effective upon our initial public offering. The 2006 Plan allows for the granting of an aggregate 5,500,000 shares of incentive stock options, non-qualified stock options, stock appreciation rights, RSUs, unrestricted stock awards, and deferred stock awards to our officers, employees, directors, and consultants. Incentive stock options are required to be issued at not less than fair market value at the date of the grant and generally vest over four or five years. The term of the options is determined by our Board of Directors but in no event will exceed ten years from date of grant. In connection with the adoption of the 2006 Plan, no further option grants were permitted under any previous stock option plans and any expirations, cancellations, or terminations under the previous plans are available for issuance under the 2006 Plan. We may satisfy awards upon exercise of stock options or RSUs with either newly issued shares or treasury shares. The total number of shares currently authorized for the 2006 Plan is 7,118,003 shares, of which 1,089,749 remain available for grant as of December 31, 2019.

We have computed the fair value of employee stock options granted each year using the following weighted average assumptions:

	2019	2018	2017
Dividend yield	0.96%	1.20%	0.70%
Volatility	42.8%	41.3%	39.1%
Risk-free interest rate	1.7%	2.7%	2.2%
Weighted average expected option term (in years)	4.7	4.8	4.6
Weighted average fair value per share of options granted	$ 12.51	$ 8.28	$ 10.37

A summary of option activity as of December 31, 2019 and the year then ended is presented below:

	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Balance outstanding at December 31, 2018 (1)	1,462,575	$ 16.41	4.54	$ 12,214,422
Granted	195,379	$ 35.53		
Exercised (2)	(509,693)	$ 9.53		$ 11,488,292
Canceled / Expired	(101,167)	$ 17.90		
Balance outstanding at December 31, 2019 (3)	1,047,094	$ 23.19	4.31	$ 13,366,595
Vested and exercisable at December 31, 2019 (4)	309,501	$ 19.64	3.50	$ 5,046,733
Expected to vest at December 31, 2019	737,593	$ 24.68	4.65	
Total	1,047,094			

(1) The aggregate intrinsic value represents the difference between the exercise price and $23.64, the closing price of our stock on December 31, 2018, for all in-the-money options outstanding.

(2) The aggregate intrinsic value of shares exercised represents the difference between the exercise price and the closing price of our stock on the date of exercise.

(3) The aggregate intrinsic value represents the difference between the exercise price and $35.95, the closing price of our stock on December 31, 2019, for all in-the-money options outstanding.

(4) The aggregate intrinsic value represents the difference between the exercise price and $35.95, the closing price of our stock on December 31, 2019, for all in-the-money options vested and exercisable as of that date.

Restricted Stock Units

A summary of our RSU activity is as follows:

	Shares	Weighted Average Grant Date Fair Value
Balance outstanding at December 31, 2018	217,895	$ 21.21
Granted	56,567	$ 35.41
Vested (1)	(61,058)	$ 18.46
Canceled	(24,723)	$ 22.19
Balance outstanding at December 31, 2019	188,681	$ 26.14

(1) The number of RSUs vested includes the shares that we withheld on behalf of employees to satisfy minimum statutory tax withholding requirements.

The fair values of the RSUs that vested during 2019, 2018, and 2017 were $2.1 million, $1.9 million, and $1.9 million, respectively.

We repurchase shares of our common stock in order to cover any minimum tax withholding liability associated with RSU vestings. A summary of our repurchases is as follows:

	2019	2018
Shares of common stock repurchased	20,524	21,410
Average per share repurchase price	$ 33.28	$ 34.62
Aggregage purchase price (in thousands)	$ 683	$ 741

Stock-based Compensation

The components of stock-based compensation expense included in the consolidated statements of operations are as follows:

	2019	2018	2017
		(in thousands)	
Stock option awards	$ 1,580	$ 1,457	$ 1,612
Restricted stock units	1,062	892	644
Total stock-based compensation	$ 2,642	$ 2,349	$ 2,256

Stock-based compensation is included in our statements of operations as follows:

	2019	2018	2017
		(in thousands)	
Cost of sales	$ 310	$ 272	$ 188
Sales and marketing	544	529	403
General and administrative	1,509	1,293	1,484
Research and development	279	255	181
Total stock-based compensation	$ 2,642	$ 2,349	$ 2,256

We expect to record the unamortized portion of share-based compensation expense of $10.4 million for existing stock options and RSUs outstanding at December 31, 2019, over a weighted-average period of 3.8 years.

Stock Repurchase Plans

On February 14, 2019, our Board of Directors authorized the repurchase of up to $10.0 million of the Company's common stock through transactions on the open market, in privately negotiated purchases or otherwise until February 14, 2020. On February 13, 2020, the Board extended the term of the repurchase program to February 14, 2021. The repurchase program may be suspended or discontinued at any time. To date we have not made any repurchases under this program.

Dividends

In February 2011, our Board of Directors approved a policy for the payment of quarterly cash dividends on our common stock. Future declarations of quarterly dividends and the establishment of future record and payment dates are subject to approval by our Board of Directors on a quarterly basis. The dividend activity for the periods presented is as follows:

Record Date	Payment Date	Per Share Amount	Dividend Payment
			(in thousands)
Fiscal Year 2019			
March 22, 2019	April 5, 2019	$ 0.085	$ 1,672
May 22, 2019	June 6, 2019	$ 0.085	$ 1,672
August 21, 2019	September 5, 2019	$ 0.085	$ 1,691
November 20, 2019	December 5, 2019	$ 0.085	$ 1,701
Fiscal Year 2018			
March 22, 2018	April 5, 2018	$ 0.070	$ 1,351
May 22, 2018	June 7, 2018	$ 0.070	$ 1,353
August 22, 2018	September 6, 2018	$ 0.070	$ 1,369
November 20, 2018	December 6, 2018	$ 0.070	$ 1,372

On February 13, 2020, our Board of Directors approved a quarterly cash dividend on our common stock of $0.095 per share payable on March 19, 2020, to stockholders of record at the close of business on March 3, 2020, which will total approximately $1.9 million.

10. Profit-Sharing Plan

We offer a 401(k) profit-sharing plan (the Plan) covering eligible U.S. employees to make tax deferred contributions, a portion of which are matched by us. We may make discretionary profit sharing contributions to the Plan in an amount determined by our Board of Directors. Our contributions vest ratably over six years of employment and amounted to approximately $0.4 million, $0.3 million and $0.2 million for 2019, 2018 and 2017, respectively.

11. Segment and Enterprise-wide Disclosures

The FASB establishes standards for reporting information regarding operating segments in financial statements. Operating segments are identified as components of an enterprise that engage in business activities for which separate, discrete financial information is available and is regularly reviewed by the chief operating decision-maker in making decisions on how to allocate resources and assess performance. We view our operations and manage our business as one operating segment. No discrete operating information is prepared by us except for sales by product line and operations by legal entity for local reporting purposes.

Most of our revenues are generated in the United States, Germany, and other European countries, Canada, the United Kingdom and Japan, and substantially all of our assets are located in the United States, Australia and France. Net sales to unaffiliated customers by country were as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
United States	$ 63,130	$ 59,078	$ 58,470
Germany	12,400	12,445	11,576
Other countries	41,702	34,045	30,821
Net sales	$ 117,232	$ 105,568	$ 100,867

Total long-term assets by country, including property and equipment, net and right-of-use leased assets were as follows:

	As of December 31,	
	2019	2018
	(in thousands)	
United States	$ 24,885	$ 11,006
Australia	1,499	1,460
France	1,089	1,071
Germany	1,405	430
Other countries	1,184	135
Total long-term assets	$ 30,062	$ 14,102

12. Supplemental Cash Flow Information

Supplemental disclosures of cash flow information are as follows:

	Year ended December 31,		
	2019	2018	2017
	(in thousands)		
Cash paid for income taxes, net	$ 4,817	$ 5,521	$ 3,146

13. Fair Value Measurements

The fair value accounting guidance requires that assets and liabilities carried at fair value be classified and disclosed in one of the following three categories:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.
- Level 2 — Observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets; quoted prices for identical or similar assets and liabilities in markets that are not active; or other inputs that are observable or can be corroborated by observable market data.
- Level 3 — Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. This includes certain pricing models, discounted cash flow methodologies and similar techniques that use significant unobservable inputs.

Level 1 assets being measured at fair value on a recurring basis as of December 31, 2019 included our short-term investment mutual fund account.

We had no Level 2 assets being measured at fair value on a recurring basis as of December 31, 2019.

As discussed in Notes 1 and 2, several of our acquisition-related assets and liabilities have been measured using Level 3 techniques. During 2019, we recorded contingent liabilities associated with our acquisition of the CardioCel and VascuCel patch business from Admedus. The agreement includes the potential for us to pay up to $7.8 million of additional consideration beyond payments made to date, with $0.3 million contingent upon the delivery of audited financial statement of the acquired business to us; $2.0 million contingent on LeMaitre Vascular's success in obtaining CE marks on the acquired products, $0.5 million contingent upon Admedus' success in extending the shelf life of the acquired products as specified in the agreement, and another $5.0 million contingent on the achievement of specified levels of revenues in the first 12 and 24 months following the acquisition date. This additional contingent consideration was initially valued in total at $2.0 million and will being re-measured each reporting period until the payment requirement ends, with any adjustments reported in income from operations. The following table provides a rollforward of the fair value of these liabilities, as determined by Level 3 unobservable inputs including management's forecast of future revenues for the acquired business, as well as, management's estimates of the likelihood of Obtaining CE marks on the acquired products, as well as of Admedus' ability to extend the shelf life of the acquired products. The contingent payment related to the delivery of audited financial statements of the business was paid in November 2019 upon satisfaction of the deliverable.

	Year ended December 31,		
	2019	2018	2017
		(in thousands)	
Beginning balance	$ 72	$ 1,300	$ 1,320
Additions	1,989	-	-
Payments	(309)	(1,199)	(126)
Change in fair value included in earnings	12	(29)	106
Ending balance	$ 1,764	$ 72	$ 1,300

14. Quarterly Financial Data (unaudited)

	Three months ended			
2019	**March 31**	**June 30**	**September 30**	**December 31**
	(in thousands, except per share data)			
Total net sales	$ 28,479	$ 29,483	$ 29,100	$ 30,170
Gross profit	19,464	20,315	20,166	19,908
Income (loss) from operations	4,435	5,915	5,905	4,928
Net income	3,513	4,624	5,184	4,613
Earnings per share				
Basic	$ 0.18	$ 0.23	$ 0.26	$ 0.23
Diluted	$ 0.17	$ 0.23	$ 0.25	$ 0.23

	Three months ended			
2018	**March 31**	**June 30**	**September 30**	**December 31**
	(in thousands, except per share data)			
Total net sales	$ 25,994	$ 27,020	$ 24,165	$ 28,389
Gross profit	18,474	18,992	17,255	19,218
Income (loss) from operations	4,862	11,541	4,613	7,193
Net income	3,853	8,751	4,314	6,025
Earnings per share				
Basic	$ 0.20	$ 0.45	$ 0.22	$ 0.31
Diluted	$ 0.19	$ 0.43	$ 0.21	$ 0.30

15. Accumulated Other Comprehensive Income (Loss)

	Year ended December 31,		
	2019	**2018**	**2017**
		(in thousands)	
Beginning balance	$ (3,900)	$ (2,289)	$ (4,583)
Other comprehensive income (loss) before reclassifications	(107)	(1,611)	2,294
Amounts reclassified from accumulated other comprehensive loss	-	-	-
Ending Balance	$ (4,007)	$ (3,900)	$ (2,289)

Changes to our accumulated other comprehensive loss consisted primarily of foreign currency translation for the years ended December 31, 2019, 2018 and 2017.

EXHIBIT 2.3

CERTAIN IDENTIFIED INFORMATION (INDICATED BY "[***]") HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED.

ASSET PURCHASE AGREEMENT

ASSET PURCHASE AGREEMENT (this "Agreement"), dated October 11, 2019, by and among LeMaitre Vascular, Inc., a Delaware corporation with an address at 63 Second Ave., Burlington, Massachusetts 01803 (the "Purchaser"), Admedus Ltd, an Australian limited liability company with an address at Toowong Tower, Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia (the "Parent"), Admedus Regen Pty Ltd, a proprietary limited company with a registered address at Toowong Tower, Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("ARPL"), Admedus Biomanufacturing Pty Ltd, a proprietary limited company with a registered address at Toowong Tower, Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("ABPL"), Admedus Investments Pty Limited, a proprietary limited company with a registered address at Toowong Tower, Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("AIPL"), Admedus (NZ) Ltd, a limited liability company with a registered address at Level 1, 50 Customhouse Quay, Wellington, 6011, New Zealand ("ANZL"), Admedus (Australia) Pty Ltd, a proprietary limited company with an address at Toowong Tower, Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("AAPL"), Admedus SARL, a Swiss company with an address at Route de Pré-Bois 20, Case postale 1877, 1215 Genève, Switzerland ("ASARL"), Admedus (Singapore) Pte. Ltd., a proprietary limited company with a registered address of 600 North Bridge Road #23-01, Parkview Square, Singapore ("ASPL"), and Admedus Corporation, a Minnesota corporation with an address at 860 Blue Gentian Road, Suite 340, Eagan, MN 55121 ("AC" and together with the Parent, ARPL, ABPL, AIPL, ANZL, AAPL, ASARL and ASPL, the "Seller Group" and each a "Member" of the Seller Group).

W I T N E S S E T H:

WHEREAS, the Seller Group develops, manufactures, markets, distributes, and sells the CardioCel, CardioCel 3D, CardioCel Neo, VascuCel, and VascuCel 3D biologic patch product lines worldwide (the "Products");

WHEREAS, the Seller Group desires to convey, sell, transfer and assign to the Purchaser, and the Purchaser desires to purchase from each Member of the Seller Group, certain assets of such Members related to the manufacture, marketing, distribution and sale of the Products (the "Business") on the terms and conditions hereinafter set forth;

WHEREAS, simultaneously with the Closing (as defined below) hereunder, ARPL and ABPL shall grant to the Purchaser certain licenses to the technology and other intellectual property of ARPL and ABPL related to the manufacture of the Products on the terms and conditions set forth in the License Agreement (as defined below);

NOW, THEREFORE, in consideration of the covenants, promises and representations set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

ARTICLE I
Purchase and Sale of Assets.

Section 1.1. Sale of Assets. Subject to the terms and conditions of this Agreement, each Member of the Seller Group does hereby sell, transfer, convey, assign and set over ("Transfer") to the Purchaser, and the Purchaser does hereby purchase and acquire from the Seller Group, all of the right, title and interest of each Member of the Seller Group in and to the Assets (as defined below) excluding, however, the Excluded Assets (as defined below). The parties to this Agreement agree that in acquiring the Assets, and as the owner of the Assets, the Purchaser shall have sole discretion as to how, when and whether it uses, deploys, or otherwise exploits the Assets, provided that such use is in accordance with the License Agreement. As a result of the transactions contemplated hereby and Purchaser's acquisition of the Business, Purchaser will have exclusive global distribution rights for the Products, subject to any existing distribution agreements that are Purchased Contracts, if any.

Section 1.2. Assets; Excluded Assets.

A. Assets. The term "Assets" shall mean the right, title and interest of each Member of the Seller Group in and to any and all of the following:

1. Tangible Assets. All machinery, equipment, business machines, tooling, molds, dies and other tangible assets or personal property used exclusively in the manufacture of the Products (collectively, the "Tangible Assets"), wherever located, including those Tangible Assets that are listed on Schedule 4.1(F).

2. Inventory. To the extent related to the Products, all finished goods (but no less than $1,245,000 in finished goods), all demonstration models, non-sterile samples, and all consigned inventory, including, without limitation, in each case any inventory in the possession of third parties of the Products (collectively, the "Inventory").

3. Purchased Contracts. Those agreements, orders and other rights of a contractual nature ("Contracts") specifically set forth on Schedule 4.1(E)(1) (the "Purchased Contracts") under the heading "Purchased Contracts."

4. Packaging Materials. Packaging materials consisting of outer boxes and cold packs sufficient for the packaging of three weeks of average weekly sales of Product.

5. Intellectual Property. All patents, copyrights, designs, drawings, engineering and manufacturing documents, technical manuals, patterns, processes, formulae, know-how, trade secrets, trademarks, service marks, trade names, domain names, inventions and discoveries (whether patentable or not), computer software, source code, and other similar rights and agreements, used exclusively with the Products, including without limitation, any license or usage rights with respect to any of the foregoing and those items set forth on Schedule 4.1(H), and all applications therefor and registrations thereof, and any Proprietary Information (as hereinafter defined) (collectively, "Intellectual Property"), including without limitation the names of the Products and all trademark and service mark rights relating to such names, if any, along with the rights (common law or otherwise), registrations and logos relating thereto, if any, and to the design elements and any variations or combinations thereof, and any and all rights to sue for past, present and future infringement or other violations of the same, and all goodwill associated with any of the foregoing. For the avoidance of doubt, neither Intellectual Property nor Proprietary Information shall include the Seller Group's ADAPT® platform, the ADAPT® tissue processing technology, any in-process research and development, or the other Excluded Assets.

6. Permits and Approvals. All permits, licenses, approvals, consents, registrations and authorizations for the Products (collectively, the "Approvals"), including without limitation all of the Approvals listed on Schedule 4.1(E)(3), subject to the Transition Services Agreement, together with all documents and records related thereto, including without limitation all design history files, device master records, device history records, validations, clinical data related exclusively to the Products, technical documentation (including design dossiers), complaint files, records of adverse events, reports of adverse events, corrections or recalls, quality management documents and the like.

7. Data and Records. The list of all customers of the Products, including those customers listed on Schedule 4.1(O) and the data, books, records, correspondence, files and papers used exclusively for the Products, whether in hard copy or electronic format used or held by any Member of the Seller Group for the Business, including, without limitation, supplier and purchasing information, sales and promotional literature, clinical data related exclusively to the Products, price lists by country (in local currency) for the Products, market data, training materials, physician data, sales and purchase and other customer correspondence for the Products, and all marketing materials related exclusively to the Products, including the materials listed on Schedule 1.1(A)(7), photos and art-work, Veeva content, drawings, prints and other like materials.

8. Global Distribution Rights. Exclusive global distribution rights to the Products, subject to the Purchased Contracts and the Transition Services Agreement.

9. Goodwill. All goodwill associated with the Business prior to the transactions contemplated by this Agreement.

10. Other Assets. The assets described on Schedule 1.2(A)(10) (the "Other Business Assets").

B. Excluded Assets. Notwithstanding anything contained in this Agreement to the contrary, the following assets of the Seller Group (the "Excluded Assets") are not included in the Assets:

1. Cash and Accounts Receivable. All cash, cash equivalents, other investments and accounts receivable of the Seller Group.

2. Insurance. Any policies of insurance of the Seller Group, whether or not relating to the Business or the Assets.

3. Excluded Contracts. All Contracts other than the Purchased Contracts (the "Excluded Contracts"), including, without limitation, the Excluded Contracts listed on Schedule 4.1(E)(1) under the heading "Excluded Contracts."

4. Manufacturing Facilities. The Seller Group's manufacturing facilities (excluding certain contents of the facilities described in Section 1.1 above).

5. In-Process R&D. All of the Seller Group's in-process research and development, and any future product developments.

6. ADAPT Assets. All of the Seller Group's ADAPT® assets, including the ADAPT® tissue processing technology, the ADAPT® patent portfolio, the ADAPT® trademark rights, the ADAPT® brand, any ADAPT® marketing materials, clinical data pertaining to ADAPT® tissue, and all other Seller Group assets relating solely to ADAPT® ("ADAPT Assets").

7. Other Trademark Assets. The assets described on Schedule 1.2(B)(7) (the "Other Trademark Assets") that if used by Purchaser would conflict with the ADAPT Assets.

ARTICLE II
Closing and Purchase Price.

Section 2.1. Closing. The closing of the transactions contemplated hereby (the "Closing") will take place simultaneously with the execution and delivery of this Agreement on October 11, 2019 (the "Closing Date"), and shall be effective as of 5pm Central Time on the Closing Date.

Section 2.2. Payment at Closing. In consideration of the Transfer to the Purchaser of the Assets and of the other representations, warranties and covenants herein, the Purchaser shall pay to or as directed by the Seller Group the total amount of $15,265,000 excluding any applicable Transfer Taxes, (the "Purchase Price"), of which:

a. $6,175,000 (the "Closing Amount") is being paid at the Closing by wire transfer of immediately available funds (such payment being hereby acknowledged by each Member of the Seller Group);

b. $670,000 (the "First Holdback Amount") shall be paid by the Purchaser not later than 15 days following the first anniversary the Closing Date by wire transfer of immediately available funds;

c. $670,000 (the "Second Holdback Amount" shall be paid by the Purchaser not later than 15 days following the third anniversary of the Closing Date by wire transfer of immediately available funds;

d. $2,000,000 (the "Third Holdback Amount" and together with the First Holdback Amount and the Second Holdback Amount, the "Holdback Amounts") shall be paid by the Purchaser not later than 15 days following the Purchaser's receipt of Conformité Européenne ("CE") mark certification for all Products under the European Medical Devices Regulation ("MDR");

e. $2,500,000 if Gross Sales in the first 12-month period following the Closing exceed $20,000,000 or $1,200,000 if Gross Sales in the first 12-month period following the Closing exceed $15,000,000 but do not exceed $20,000,000 (either amount, the "First Sales Earn-Out");

f. $2,500,000 if Gross Sales in the second 12-month period following the Closing exceed $30,000,000 or $1,200,000 if Gross Sales in the second 12-month period following the Closing exceed $22,500,000 but do not exceed $30,000,000 (either amount, the "Second Sales Earn-Out" and together with the First Sales Earn-Out, the "Sales Earn-Outs");

g. $500,000 if by the first anniversary of the Closing the Seller Group (i) completes all testing and documentation necessary to extend, and extends, the shelf-life of the Products from 36 months to at least 60 months in the United States and (ii) delivers to the Purchaser all such testing and documentation (which shall become the property of the Purchaser), which shall be paid by the Purchaser not later than 15 days following the first anniversary of the Closing Date by wire transfer of immediately available funds if the foregoing conditions to payment have been satisfied in full; and

h. $250,000 if by October 31, 2019 the Seller Group delivers to the Purchaser all of the S-X Financial Statements (as defined below), which shall be paid by the Purchaser within five (5) business days following the Purchaser's receipt of all of the S-X Financial Statements.

Section 2.3 Calculation of Sales Earn-out Payments.

A. "Gross Sales" as used in Section 2.2 means the gross amount recognized by the Purchaser or its Affiliates from the sale of the Products during the applicable Sales Earn Out period, less amounts repaid or credited by reason of rejection or return. Gross Sales shall not include any amounts in respect of shipping or handling. Transfer of Product between the Purchaser and its Affiliates, or between its Affiliates, shall not be a "sale" under Gross Sales. Gross Sales shall be calculated based on the ordinary course of business of the Purchaser and in accordance with GAAP.

B. The First Sales Earn-Out and the Second Sales Earn-Out shall be paid by wire transfer of immediately available funds within fifteen (15) days of the date that Gross Sales for the relevant twelve month period have been finally determined by the Purchaser's finance department and communicated to the Seller Group in writing, which date shall be no later than sixty (60) days following the conclusion of the relevant twelve month period (each a "Determination Date"), and such Gross Sales have been determined to have met the conditions set forth above. Each payment shall be accompanied by a report that details the Gross Sales in reasonably sufficient detail for the Seller Group to confirm the amount of the payment (the "Gross Sales Report"). For purposes of clarification, even if the Purchaser has determined that the First Sales Earn-Out or Second Sales Earn-Out, as applicable, is $0, Purchaser shall still provide a corresponding Gross Sales Report in order for Parent to confirm such determination.

C. Each Member of the Seller Group hereby appoints the Parent as its representative in all matters related to the Sales Earn-Outs, including the resolution of any disputes related thereto, and the Right of First Refusal (as defined in Section 5.15 below).

D. After receipt of a Gross Sales Report, Parent shall have sixty (60) days (the "Review Period") to review such Gross Sales Report. During the Review Period, Purchaser shall permit Parent and its representatives to have reasonable access, at Parent's sole expense, to such books, records and other documents as are necessary to calculate and confirm Purchaser's determination of Gross Sales but in no event shall Parent have access to any Purchaser data related to anything other than Gross Sales.

E. On or prior to the last day of the Review Period, Parent may object to the Gross Sales Report by delivering to Purchaser a written statement (a "Dispute Notice") setting forth Parent's objections in reasonable detail. If Parent fails to deliver the Dispute Notice before the expiration of the Review Period, the applicable Sales Earn-Out amount (which may be $0) shall be deemed to have been accepted by Parent. If Parent delivers the Dispute Notice before the expiration of the Review Period, then senior executives of Purchaser and Parent shall negotiate in good faith to resolve dispute within thirty (30) days after the delivery of the Dispute Notice.

F. If the issues in the Dispute Notice are not resolved within the thirty (30) day negotiating period, then the Parent and the Purchaser shall mutually agree on a third party auditor who is not otherwise engaged by either Party (the "Expert") to resolve the disputed items specified in the Dispute Notice. The Expert will (i) resolve the disputed items specified in the Dispute Notice and (ii) calculate the Gross Sales for the First Sales Earn-Out or the Second Sales Earn-Out, as applicable, as modified only by the resolution of such items, and in each case in accordance with the methodology for the calculation of "Gross Sales" as provided in this Agreement. The determination of the Expert will be made within 60 days after being selected and will be final and binding upon the parties, absent manifest error or fraud.

G. If the Expert determines that the Seller Group has been underpaid for either the First Sales Earn-Out or the Second Sales Earn-Out, then Purchaser shall within 10 Business Days of its receipt of the determination of the Expert pay to the Seller Group the amount of the underpayment. If the Expert determines that Purchaser has overpaid the Seller Group for either the First Sales Earn-Out or the Second Sales Earn-Out, then the Parent shall within 10 Business Days of its receipt of the determination of the Expert pay to the Purchaser the amount of the overpayment.

H. Responsibility for the fees and expenses of the Expert will be determined as follows:

1. If the Expert determines that the Purchaser has under-calculated Gross Sales by $100,000 or more, the Purchaser shall be solely responsible for the fees and expenses of the Expert.

2. In all other cases, the fees and expenses of the Experts shall be borne by the party whose position did not substantially prevail in such determination, or if the Expert determines that neither party could be fairly found to be the substantially prevailing party, then such fees, costs and expenses will be borne 50% by the Seller Group, on the one hand, and 50% by Purchaser, on the other.

I. From and after the Closing, the Purchaser shall have sole discretion with regard to all matters relating to the operation of the Business and the Assets. Each Member of the Seller Group acknowledges that the Purchaser has no obligation to the Seller Group to operate the Business in order to achieve or maximize the First Sales Earn-Out or the Second Sales Earn-Out and there is no assurance that the Purchaser will achieve Gross Sales at the levels necessary to trigger the First Sales Earn-Out or the Second Sales Earn-Out.

J. Following the Closing, if the Purchaser sells or otherwise transfers all or a material portion of the Business in one or a series of transactions (in each case a "Sale Event") to any party other than a Member of the Seller Group, then if such Sale Event occurs prior to the Determination Date of the First Sales Earn-Out, then the Purchaser shall pay to the Seller Group the full amount of the First Sales Earn-Out. Payments due to the Seller Group in connection with a Sale Event pursuant to this Section 2.3(J) shall be paid by wire transfer of immediately available funds at the closing of such Sale Event. Notwithstanding the foregoing, no payment shall be owing or payable if a Sale Event is required by a Governmental Entity or in the case of the sale of the Purchaser or all or a material portion of the Purchaser's assets, where the material portion includes significant assets in addition to the Business.

K. If ARPL and ABPL shall have failed to deliver all Product agreed by the parties to be delivered under the Transition Services Agreement by any payment date specified in Section 2.2 or 2.3, then the Purchaser's obligation to pay any amount to the extent owing under Section 2.2(b), (c), (d), (e), (f), (g) or (h) shall be tolled until such Product shall have been delivered in full and otherwise in compliance with the terms of the Transition Services Agreement.

Section 2.4. Closing Documents. The Seller Group and the Purchaser shall deliver to each other, at the Closing, the certificates, consents, approvals, agreements, and documents relating to the transactions contemplated by this Agreement that are set forth on Schedule 2.3 hereto (collectively with this Agreement, the "Closing Documents").

Section 2.5. Transition Services. The Parties acknowledge and agree that certain Tangible Assets being acquired by Purchaser in connection with the Transaction will remain in the possession of ARPL and ABPL following Closing pursuant to the terms of a transition services agreement ("Transition Services Agreement") being entered into by and among the Purchaser, Parent, ARPL and ABPL contemporaneously with the Closing. In the Transition Services Agreement, Purchaser shall grant to ARPL and ABPL the right and license to use the Tangible Assets acquired by the Purchaser solely and exclusively to perform the services set forth in the Transition Services Agreement as more particularly described in the Transition Services Agreement and further subject to the terms and conditions set forth therein. Upon a schedule to be agreed to in writing in accordance with the Transition Services Agreement, the Tangible Assets not delivered at Closing shall be packed for shipment by the Seller Group and delivered to the Purchaser's main facility. The Seller Group and the Purchaser shall each bear 50% of the cost of shipment of such assets to the Purchaser.

Section 2.6. Licenses. ARPL and ABPL shall grant the Purchase a license to certain intellectual property assets necessary to manufacture the Products ("Licenses") as set forth in the License Agreement ("License Agreement") dated as of the Closing Date by and among the Purchaser, ARPL and ABPL.

Section 2.7. Inventory Reconciliation. Each Member of the Seller Group shall cause to be shipped to the Purchaser all finished goods Inventory owned by the Seller Group as follows:

a. The finished goods Inventory identified on Schedule 2.7 (the "AU Inventory") as deliverable to the Purchaser's facility located at LeMaitre Vascular Pty. Ltd., 36 Munster Terrace, North Melbourne, VIC 3051 Australia in two shipments: (i) the first shipment, which shall conform to a zero dollar purchase order submitted by the Purchaser on the Closing Date, shall be delivered to the Purchaser by October 15, 2019 and (ii) the second shipment which shall include the balance of the AU Inventory, shall be delivered to the Purchaser by October 18, 2019;

b. The finished goods Inventory identified on Schedule 2.7 (the "DE Inventory") as deliverable to the Purchaser's facility located at LeMaitre Vascular GmbH, Otto-Volger-Str. 5 a/b, 65843 Sulzbach/Ts., Germany in two shipments: a) the first shipment, which shall conform to a zero dollar purchase order submitted by the Purchaser on the Closing Date, shall be delivered to the Purchaser by October 15, 2019 and b) the second shipment, which shall include the balance of the DE Inventory, shall be delivered to the Purchaser by October 18, 2019; and

c. The finished goods Inventory identified on Schedule 2.7 (the "US Inventory") as deliverable to the Purchaser's facility located at LeMaitre Vascular, Inc., 63 Second Avenue, Burlington, Massachusetts 01803 USA in two shipments: a) the first shipment, which shall conform to a zero dollar purchase order submitted by the Purchaser on the Closing Date, shall be delivered to the Purchaser by the Closing Date and b) the second shipment, which shall include the balance of the US Inventory, shall be delivered to Purchaser by October 18, 2019.

d. The finished goods Inventory identified on Schedule 2.7 (the "Retained Inventory" and collectively with the US Inventory, the AU Inventory and the DE Inventory, the "Shipped Inventory") as retained by the Seller Group at its facility located at 26 Harris Road, Malaga, Western Australia 6090.

e. Each shipment of Product shall be accompanied by a certificate of conformance prepared by the Seller Group, containing the part number, lot number, quantity and sterilization lot number of each Product and statements that each Product has been released for sale, was manufactured in accordance with the Seller Group's internal procedures and complies with all applicable standards and regulations.

f. Except in the case of the Retained Inventory promptly following receipt of each shipment, the Purchaser shall cause to be taken a SKU and physical inventory of the Shipped Inventory contained in such shipment (each a "Finished Goods Evaluation"). Each Member of the Seller Group hereby appoints the Parent as its representative in all matters related to the Finished Goods Evaluations. The Parent shall be entitled to have a single representative present during each Finished Goods Evaluation, and the Purchaser and the Parent shall each bear their respective costs and expenses relative to the Finished Goods Evaluations. In the case of the Retained Inventory, the Parent shall report to the Purchaser in writing the number of units by SKU and the expiration date of each such unit (the "Retained Goods Evaluation"). The value of the Shipped Inventory ("Shipped Inventory Value") shall be determined using the unit cost as set forth on Schedule 2.7(e). Notwithstanding the foregoing, the Shipped Inventory that (i) is damaged, open, a non-sellable sample or evaluation inventory that is held for sales representatives or (ii) has a remaining shelf life of less than one year shall be valued at $0. If the Shipped Inventory Value is determined in all of the Finished Goods Evaluations plus the Retained Goods Evaluation to be less than $1,245,000 in the aggregate, then the Parent shall refund the difference between $1,245,000 and such determined value to the Purchaser on a dollar-for-dollar basis within thirty (30) days of the date of the final Finished Goods Evaluation. If the Shipped Inventory Value is determined in all of the Finished Goods Evaluations plus the Retained Goods Evaluation to be greater than $1,245,000, then the Purchaser shall pay to the Seller Group the difference between such determined value and $1,245,000 on a dollar-for-dollar basis within thirty (30) days of the date of the final Finished Goods Evaluation. For the avoidance of doubt, all finished goods Inventory, regardless of location or shelf life, shall be included in the Transfer to the Purchaser at Closing.

g. The Seller Group and the Purchaser shall each bear 50% of the cost of the shipment of the Shipped Inventory.

ARTICLE III
Liabilities.

Section 3.1. Assumed Liabilities. As consideration for the purchase of the Assets pursuant to this Agreement, the Purchaser does hereby assume, and does hereby agree to pay, satisfy, discharge and perform, in accordance with their respective terms, the liabilities and obligations of any Member of the Seller Group arising under the Purchased Contracts, provided however, the Purchaser shall not so assume any such obligations or liabilities under any Purchased Contract to the extent that (a) such obligations or liabilities arise out of a breach by any Member of the Seller Group or its affiliates or predecessors of any such Purchased Contract; (b) such obligations or liabilities arise out of facts or circumstances that constitute a breach of the representations and warranties made to the Purchaser by any Member of the Seller Group hereunder; or (c) such obligations or liabilities relate to any period(s) prior to the date of assumption at the Closing (collectively, the "Assumed Liabilities").

Section 3.2. Excluded Liabilities. Notwithstanding anything to the contrary contained in this Agreement, the Schedules hereto or any other Closing Document, the Purchaser does not and will not assume or agree to pay, satisfy, discharge or perform, and shall not be deemed by virtue of the execution and delivery of this Agreement or any other Closing Document, or as a result of the consummation of the transactions contemplated by this Agreement, the Closing or otherwise to have assumed, or to have agreed to pay, satisfy, discharge or perform any of the Excluded Liabilities. The term "Excluded Liabilities," as used herein, shall mean any and all liabilities, debts, claims, obligations, taxes, expenses or damages, whether known or unknown, contingent or absolute, named or unnamed, disputed or undisputed, legal or equitable, determined or indeterminable, or liquidated or unliquidated (any and all of the foregoing, "Liabilities") that are not specifically Assumed Liabilities, including without limitation:

(i) any and all Liabilities relating to employee benefits or compensation arrangements, including, without limitation, any Liabilities under any Member's employee benefit agreements, plans or other arrangements or any payroll, bonus, severance or wages owed by any Member of the Seller Group;

(ii) any and all Liabilities relating to the employment, violation of privacy rights or the termination of the employment of any employee or former employee by any Member of the Seller Group;

(iii) any and all Liabilities relating to the Excluded Contracts;
(iv) any and all Liabilities of any Member of the Seller Group for Taxes;
(v) any and all Liabilities that may arise or have arisen in connection with products manufactured or sold by any Member of the Seller Group prior to the Closing, including warranty obligations;
(vi) any and all Liabilities arising between any Member of the Seller Group and any distributor or agent relating to the period prior to Closing; and
(vii) any and all Liabilities of any Member of the Seller Group in respect of indebtedness (whether absolute, accrued, contingent, fixed or otherwise, whether due or to become due) of any Member of the Seller Group of any kind.

ARTICLE IV
Representations and Warranties.

Section 4.1. Representations and Warranties by the Seller Group. The Members of the Seller Group hereby jointly and severally represent and warrant to the Purchaser that:

A. Corporate Existence and Qualification of the Seller; Due Execution; Etc. Each Member is a corporation duly organized, validly existing and subsisting under the Laws of its country or state of incorporation and has the requisite corporate power and authority to own, lease or otherwise hold the Assets and to carry on the Business as conducted through the Closing Date. Each Member has all requisite corporate power and authority to execute, deliver and perform this Agreement and the Closing Documents to which it is a party and to consummate the transactions contemplated hereby and thereby. The execution and delivery of this Agreement and the Closing Documents to be executed by each Member and the consummation by each Member of the transactions contemplated hereby and thereby have been duly authorized by all requisite corporate action, including the authorization and approval of the board of directors and the requisite percentage of stockholders of each Member. Assuming the due execution of this Agreement and the Closing Documents by the Purchaser, this Agreement and the Closing Documents to which the Members are a party constitute valid and binding obligations of each Member, enforceable in accordance with their respective terms, subject only to applicable bankruptcy, insolvency, reorganization, moratorium or other similar Laws relating to creditors' rights generally and to general principles of equity (regardless of whether such enforcement is considered in a proceeding at law or in equity).

B. No Violation. Except as set forth on Schedule 4.1(B), neither the execution and delivery by the Members of this Agreement or the Closing Documents to be executed by the Members, nor the consummation by the Members of the transactions contemplated hereby or thereby: (i) violates or will violate any Law applicable to any Member; (ii) violates or will violate any order, ruling, writ, judgment, injunction or decree of any Governmental Entity (an "Order") applicable to any Member; (iii) conflicts or will conflict with, or results or will result in a breach of or default under the organizational documents of any Member, or results or will result in any breach of any Purchased Contract applicable to any Member; (iv) results or will result in the imposition of any Lien (as defined below) on any of the Assets; or (v) conflicts with any agreement, contract or other instrument to which any Member is a party. As used herein, the term "Lien" means any liens, claims, mortgages, charges, security interests, leases, covenants, options, pledges, rights of others, easements, rights of refusal, reservations, restrictions, encumbrances and other defects in title. Except as set forth on Schedule 4.1(B), no consent, authorization, or approval from, or registration or filing with, any Governmental Entity or any other third party is required to be obtained or made by or with respect to any Member in order to perform its obligations under this Agreement or in connection with the consummation of the transactions hereunder.

C. Financial Information.

1. Attached hereto as Schedule 4.1(C)(1) are true and complete copies of (i) the annual report of the Seller Group for the six months ended December 31, 2017; (ii) the half year financial report for the six months ended June 30, 2018; (iii) the full year financial report for the year ended December 31, 2018; and (iv) the half year financial report for the six months ended June 30, 2019.

2. All information provided on Schedule 4.1(C)(1) fairly and accurately present the financial position of the Seller Group at the dates indicated in such financial statements or information and the results of operations for the periods stated therein and has been prepared in accordance with Australian Accounting Standards adopted by the Australian Accounting Standards Board, the Corporations Regulations 2001 and the Australian equivalents to the International Financial Reporting Standards, consistently applied throughout such periods.

3. The sales data attached hereto as Schedule 4.1(C)(3) are true, correct and complete, and accurately reflect the sales of the Business in dollars and units, by country, as of the year ended December 31, 2018 and the nine months ended September 30, 2019.

4. The 2019 standard cost summary attached hereto as Schedule 4.1(C)(4) is true, correct and complete and accurately reflects the standard costs by SKU associated with manufacturing the Products.

D. Absence of Certain Transactions. Except as set forth on Schedule 4.1(D), since January 1, 2019, (i) the Seller Group has caused the Business to be operated only in the ordinary course, consistent with past historical, normalized practice ("Ordinary Course of Business"), and (ii) there has been no Material Adverse Effect. Without limiting the generality of the foregoing, since such date, with respect to the Business, except as set forth on Schedule 4.1(D), no Member has: (1) disposed of any assets, incurred any accounts payable or receivable, or acquired any material assets, except in the Ordinary Course of Business; (2) entered into or amended or terminated any agreements or arrangements with customers or suppliers other than in the Ordinary Course of Business; (3) entered into or renewed any distribution agreements for the distribution of Products other than in the Ordinary Course of Business; (4) granted or entered into any mortgage, security, charge, surety, guarantee or indemnity covering the Assets (save for Liens arising in the Ordinary Course of Business and which have been discharged prior to Closing); (5) assumed any Liability or obligation, or given any commitment outside the Ordinary Course of Business; (6) permitted any insurances with coverages applicable to the Business to lapse or done or omitted to do anything which could make any insurance policy void or voidable; (7) deviated from its standard selling practices for the Products; (8) entered into any transaction with any Affiliate with respect to its Business, except in the Ordinary Course of Business; (9) materially changed the pricing charged for the Products; (10) taken any action, or otherwise omitted to take any action, which, if this Agreement had been in effect at such time, would have reasonably been expected to cause a breach of the any Member's representations, warranties, covenants and agreements herein; or (11) agreed or committed to do any of the foregoing.

E. Material Contracts and Obligations; Approvals.

1. Purchased Contracts. All Purchased Contracts are listed under the sub-heading "Purchased Contracts" on Schedule 4.1(E)(1). The Seller Group has no contracts or Contracts related to the Business other than those represented by the Purchased Contracts and the Excluded Contracts. The only Purchased Contracts relating to the sales of the Products in which a payment would be owed to the counterparty due to the termination of the Contract are listed on Schedule 4.1(E)(1) under the sub-heading "Purchased Contracts with Termination Fees." Except as provided on Schedule 4.1(E)(1) under the sub-heading "Unsigned Purchased Contracts," the Seller Group has delivered to the Purchaser true and complete signed copies of all Purchased Contracts that are in written form and any amendments thereto. Each such Purchased Contract is in full force and effect and represents the valid and binding obligation of the Member party to such Purchased Contract. To the knowledge of the Seller Group, there are no oral contracts, agreements or arrangements that, individually or in the aggregate, are material to the Business.

2. Defaults. Except as set forth on Schedule 4.1(E)(2), each Purchased Contract is freely assignable to the Purchaser under the terms of the Purchased Contract; each of the Member party to the Purchased Contract and, to the knowledge of the Seller Group, the other party or parties thereto, has performed in all material respects all obligations required to be performed by it thereunder through the Closing Date; the Member party to the Purchased Contract and, to the knowledge of the Seller Group, the other party or parties thereto, is not (with or without the lapse of time or the giving of notice, or both) in default under any such Purchased Contract; and the Member party to the Purchased Contract has not received any notice of any default (whether monetary or non-monetary) or termination of any such Purchased Contract from any other party thereto.

3. Approvals. Schedule 4.1(E)(3) sets forth a true and complete list of all Approvals currently owned by each Member of the Seller Group, by Product and territory, true and complete copies of which have been provided by the Seller Group to the Purchaser. The Approvals constitute all of the permits, licenses, approvals, registrations, consents and authorizations required for the conduct of the Business within the Admedus Territory as conducted as of the Closing Date. All Approvals are valid and subsisting and in good standing and there is no default thereunder. No Member has received written notice of any claim, action, suit, proceeding or investigation pertaining to the Business in or before any Governmental Entity, whether brought, initiated, asserted or maintained by a Governmental Entity or any other person or entity nor, to the knowledge of the Seller Group, has any such claim, action, suit, proceeding or investigation been threatened, to revoke, suspend or limit the rights of any Member of the Seller Group under any of the Approvals, and the Seller Group is in compliance in all material respects with each of the Approvals. Except as identified on Schedule 4.1(E)(3), the Seller Group holds all such Approvals and has not previously transferred any Approval to a third party.

4. Absence of Certain Business Contracts. Except as identified on Schedule 4.1(E)(4), the Seller Group has no Contracts of the following types: (1) any Contract granting to any person a first-refusal, first-offer or other right to purchase or acquire any Assets, any of the Licenses or the Business; (2) any Contract under which any Member of the Seller Group is or has agreed to become a joint venture or partner with respect to the Business; (3) any Contract granting a power of attorney that could be binding upon the Purchaser; (4) any Contract with respect to letters of credit, surety or other bonds, or pursuant to which any Assets are, or are to be, subjected to a Lien; or (5) any Contract to indemnify any third party in connection with the Business for which Purchaser may become liable.

F. Assets.

1. Schedule 4.1(F) sets forth a true and complete list of all of the Tangible Assets as of the Closing Date, giving the location and information reasonably necessary for the identification of such Asset.

2. All Tangible Assets included in the Assets are in good operating condition, normal wear and tear excepted, and are generally adequate and suitable for the uses to which they are being put. The books and records included in the Assets described in Section 1.2(A)(7), all of which have been made or will at Closing be made, available to the Purchaser, are true and complete in all material respects. Except as set forth in this Agreement as an Asset, no design testing documents, marketing materials, or clinical data, and no other customer or supplier lists, all solely related to, used exclusively or held for use exclusively in, and required exclusively for, the manufacture, production, marketing, sale and distribution of the Products, are in the Seller's possession or control. The Assets, the Excluded Physical Assets and the Licenses include all of the assets reasonably necessary (i) for one or more individuals of ordinary skill in the art to manufacture the Products and (ii) to legally market and sell the Products, in each case assuming the Purchaser obtains assets substantially similar to the Excluded Physical Assets and uses the Assets and the assets substantially similar to the Excluded Physical Assets in a manner consistent with the use of the Assets and the Excluded Physical Assets by the Seller Group.

G. Title to Assets. Immediately prior to Closing, the Seller Group is the sole, true and lawful owner of, and has good and marketable title in and to, all of the Assets, free and clear of all Liens.

H. Intellectual Property.

1. Schedule 4.1(H)(1) sets forth a true and complete list of all registered Intellectual Property owned or used by the Seller Group exclusively in the Business, and includes the jurisdiction in which such item of Intellectual Property has been registered or filed, the status, the applicable application and registration or serial number, the expiration date, and if applicable, any co-owners thereof. The Seller Group owns or has the continuing valid and legal right to use, pursuant to license, sublicense, agreement, or permission, the Intellectual Property. The Intellectual Property, taken together with the Licenses, includes all of the Intellectual Property of the Business and necessary for the manufacture and sale of the Products as of the Closing Date. With respect to the Intellectual Property: (i) the Seller Group possesses all right, title and interest in and to such Intellectual Property, free and clear of any encumbrance, license or other restriction, or otherwise has sufficient rights to use such Intellectual Property pursuant to a license or permission as may be necessary in connection with the operation of the Business; (ii) such Intellectual Property is not subject to any outstanding injunction, judgment, order, decree, ruling or charge; (iii) no action, suit, proceeding, hearing, investigation, charge, complaint, claim or demand is pending or threatened which challenges the legality, validity, enforceability, use or ownership of such Intellectual Property; (iv) no Member of the Seller Group has agreed to indemnify any person for or against any interference, infringement, misappropriation or other conflict with respect to such Intellectual Property; and (v) no Member of the Seller Group has granted any license of any kind in and to such Intellectual Property to any third party. There are no, and have not been any, past, present and future royalties, fees or other liabilities payable or owing by any Member of the Seller Group to any owner or licensee of, or any other claimant to, any Intellectual Property.

2. No Member of the Seller Group has, in the conduct of the Business or the use of the Intellectual Property, interfered with, infringed upon or misappropriated any patent, copyright, trade secret or other intellectual property rights of third persons, and no Member of the Seller Group has received any written claim, demand or notice alleging any such interference, infringement, misappropriation or violation of the intellectual property rights of third persons (including any claim that it must license or refrain from using any such rights of any third party) relating to its Business. To the knowledge of each Member of the Seller Group, no third party is currently or has interfered with, infringed upon, misappropriated or otherwise come into conflict with any of the Intellectual Property.

3. No Intellectual Property is the subject of any royalty, license, sublicense, agreement or permission granted by any third party.

4. Except as identified on Schedule 4.1(H)(4), none of the processes, methodologies, trade secrets, research and development results, and other know-how included in the Intellectual Property, the value of which is contingent upon maintenance of the confidentiality thereof, has been disclosed by any Member of the Seller Group to any person other than employees or contractors of the Seller Group who are parties to customary confidentiality and non-disclosure agreements with the Seller Group or as required by Law.

5. Except as identified on Schedule 4.1(H)(5), no Member of the Seller Group has conveyed, licensed, transferred, given any security interest in, or otherwise transferred or encumbered any of the Intellectual Property to any party other than to the Purchaser pursuant to the Transfer. By means of the Transfer, each Member of the Seller Group is conveying all of its rights and interest in and title to the Intellectual Property.

6. In the reasonable judgment of the Seller Group, all necessary registration, maintenance and renewal fees in connection with the Intellectual Property have been paid, and all necessary documents, recordations and certificates in connection with the Intellectual Property have been filed with the relevant patent, copyright, trademark or other authorities in the United States or foreign jurisdictions, as the case may be, for the purposes of prosecuting or maintaining the Intellectual Property. No interference, opposition, reissue, reexamination or other similar proceeding is pending in which any Intellectual Property is being contested or challenged. Except as set forth on Schedule 4.1(H)(1), to the knowledge of the Seller Group, there are no actions that must be taken within three (3) months of the Closing, including the payment of any registration, maintenance or renewal fees or the filing of any documents, applications or certificates, for the purposes of maintaining, perfecting, preserving or renewing any item of Intellectual Property.

I. Litigation. Except as indicated on Schedule 4.1(I), there are no Legal Proceedings pending or, to the knowledge of the Seller Group, threatened against the Seller Group or any Member and pertaining to the Products or the Business, including without limitation any legal proceeding that seeks to enjoin or obtain damages in respect of the consummation of the transactions contemplated by this Agreement or any other Closing Document. There is no Legal Proceeding pertaining to the Products or the Business (including employees) that any Member of the Seller Group, or its Affiliates, has initiated or intends to initiate. There are no claims against any Member of the Seller Group or the Business pending, or to the knowledge of the Seller Group, threatened alleging that any Products sold are defective or fail to meet any product warranties. No Member of the Seller Group has incurred Liability arising out of any injury to individuals as a result of the marketing, distribution or sale of any Product. No Member of the Seller Group has knowledge of any inquiry or investigation made in respect thereof by any Governmental Authority.

J. Compliance With Laws.

1. General. No Member of the Seller Group is in default with respect to any Order pertaining to the Business. The Business is and at all times has been operated in compliance in all material respects with all applicable Laws.

2. Domestic and Foreign Regulatory Compliance. A true and complete list of all territories and countries where Products are approved, cleared or registered for sale is attached hereto as Schedule 4.1(J)(1) ("Admedus Territory"). Each Member of the Seller Group represents that it and its Affiliates have complied in all material respects with all applicable requirements pertaining to the Business of: (1) the United States Food and Drug Administration ("FDA"); (2) each of the applicable regulatory bodies in those member states of the European Union in which any Member of the Seller Group has sold or distributed the Products, directly or indirectly; and (3) each of the applicable regulatory bodies of any other territory or country listed on Schedule 4.1(J)(1) (each, a "Third Country"), including without limitation in each case:

(i) all applicable FDA pre-market clearance ("510(k)") or pre-market approval ("PMA") requirements set forth in 21 C.F.R. §§ 807, 814; all applicable CE-MDD marking requirements set forth in 93/42/EEC; the Medical Device Directive, as implemented in each member country (the "MDD"), and any similar requirement set forth in the laws or regulations of any Third Country; including, in each case, the requirement to obtain a new clearance or approval for modifications to existing Products;

(ii) all applicable FDA export requirements of the Federal Food, Drug and Cosmetic Act, as amended (the "FDC Act"), codified at 21 U.S.C. §§ 381, 382.

(iii) all applicable establishment registration and device listing requirements set forth in 21 C.F.R. § 807; in the MDD or in the laws or regulations of any Third Country;

(iv) all applicable design, manufacturing and testing requirements set forth in 21 C.F.R. § 820; in the MDD or in the laws or regulations of any Third Country;

(v) all applicable complaint handling requirements set forth in 21 C.F.R. § 820.198; in the MDD or in the laws or regulations of any Third Country; including without limitation the record keeping and investigation requirements thereof;

(vi) the medical device reporting requirements set forth in 21 C.F.R. § 803; the adverse event reporting requirements set forth in the MDD and any similar requirements set forth in the laws or regulations of any Third Country; and

(vii) the removal and corrections requirements set forth in 21 C.F.R. § 806; in the MDD or in the laws or regulations of any Third Country.

There have been no recalls, field notifications, alerts or seizures requested or threatened relating to the Products or the Business. No Member of the Seller Group has received written notice (whether completed or pending) of any Legal Proceeding seeking recall, suspension or seizure of any Products.

The Seller Group has provided to the Purchaser true and complete copies of all 510(k) clearance or approval letters received by any Member of the Seller Group from the FDA in connection with the Business and provided the Purchaser with access to all related documents and information, including device master files. The Seller Group has provided to the Purchaser true and complete copies of all European Union notified body's certifications and all approvals and registrations from the Third Countries relating to the Business.

The Seller Group has provided to the Purchaser true and complete copies of all medical device reports, complaints, corrective actions, malfunctions, adverse event reports and the like with respect to the Products, to the extent in the possession or control of the Seller Group. There is no safety, quality or efficacy issue with regard to the Products that would reasonably be expected to materially or substantially impair the ability of the Purchaser to successfully market and sell the Products. All manufacturing operations of the Business have been, and are being, conducted in compliance in all material respects with applicable good manufacturing processes and quality systems regulations, and all manufacturing and testing processes are sufficiently documented to permit such material compliance.

K. Labor and Employment Matters. There are no organizing activities or collective bargaining arrangements that could affect the Business pending or under discussion with any labor organization or employee. There are, and since January 1, 2018 there have been, no lockouts, strikes, slowdowns or work stoppages pending or threatened by or with respect to any employees or the Business. Except as identified on Schedule 4.1(I), no Member of the Seller Group is currently a party to, and no Member of the Seller Group has been threatened with, any Legal Proceeding by any employee or former employee of any Member of the Seller Group. To the Seller Group's knowledge, there are no material controversies, grievances or claims pending or threatened, by any employee or former employees of any Member of the Seller Group with respect to their employment or compensation.

L. Suppliers. Schedule 4.1(L) contains a true and complete list of all suppliers of components, supplies or materials used in the manufacture of the Products. No supplier is a sole source supplier. The Seller Group has no knowledge of any condition, event or occurrence that could reasonably be anticipated to materially adversely affect, after the Closing, the supply of materials or provision of services to the Business by any third party.

M. Insurance Policies. Schedule 4.1(M) contains a true and complete list of all policies of insurance relating to the Business currently maintained by the Seller Group. All such insurance is in full force and effect, and no premiums thereon are due and unpaid. No written notice of cancellation or termination has been received by any Member of the Seller Group with respect to any such policy of insurance, no claim is currently reserved or, to the knowledge of the Seller Group, should be reserved under any policy of insurance, and all of such insurance is so-called "occurrence-based" insurance. The Seller Group does not have and has not had any insurance that is or was maintained as self-insurance.

N. Inventory. Schedule 4.1(N) contains a true and complete aged list of the Inventory as of September 30, 2019 and as of October 4, 2019, reported separately by product line, giving model or other identifying number. The finished goods Inventory consists of solely of items that (i) are of a quantity and quality usable and saleable in the ordinary course of the Business and (ii) are not opened, damaged, obsolete, faulty, slow-moving or otherwise unmarketable. Except as provided on Schedule 4.1(N), the Inventory does not consist of any items held on consignment. No Member of the Seller Group has knowledge of any condition, event or occurrence that could reasonably be anticipated to adversely affect, after the Closing, the supply of Inventory.

O. Customers. A true and complete list of all customers purchasing Products from the Seller or its Affiliates during the period from January 1, 2017 through the day before the Closing Date, with all available ship-to addresses, contact information, and detailed sales history in local currency and units by SKU, has been provided to the Purchaser as Schedule 4.1(O). No Member of the Seller Group has received written notice from, and each Member is not otherwise aware that, any customer of the Business intends to stop purchasing, or materially reduce its volume of purchases of, Products.

P. Brokers' Fees. The Seller Group has made no agreement or taken any other action which will cause the Purchaser to become obligated for any broker's or other fee or commission as a result of any of the transactions contemplated by this Agreement. Any broker's fee incurred by any Member of the Seller Group shall be paid by the Seller Group.

Q. Hazardous Materials. Each Member of the Seller Group is, and has at all times been, in compliance in all material respects with all applicable Environmental Laws and has obtained and is in compliance in all material respects with all required environmental permits under applicable Environmental Law. There are no claims pursuant to any Environmental Law pending or, to the knowledge of the Seller Group, threatened, against any Member of the Seller Group in connection with the conduct or operation of the Business or the ownership or use of the Assets. Attached hereto as Schedule 4.1(Q) is a true and correct list of all Hazardous Materials used in the Business, whether by any Member of the Seller Group or any third party engaged by the Seller Group in connection with the production of any of the Products. For purposes of this Agreement, "Hazardous Material" shall mean any pollutant, toxic substance, hazardous waste, hazardous material, hazardous substance or oil or other petroleum product, as any of the foregoing may be defined in any Environmental Law, where "Environmental Law" shall mean any and all applicable federal, state, county or local law, ordinance or regulation relating to the generation, discharge, release, containment, storage, transportation, disposal, assessment or cleanup of Hazardous Materials or other contaminants or similar materials, including without limitation the following: (1) the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. §9601 et seq.; (2) the Toxic Substances Control Act, 15 U.S.C. §2101 et seq.; (3) the Federal Insecticide, Fungicide and Rodenticide Act, 7 U.S.C. §136; (4) the Hazardous Materials Transportation Act, 49 U.S.C. §§1801 to 1812; (5) the Federal Water Pollution Control Act, 32 U.S.C. §1251 et seq.; (6) the Federal Solid Waste Disposal Act; (7) the Federal Clean Air Act, 42 U.S.C. §1857 et seq.; and (8) any other federal, state, county, or local statutes or implementing regulations (or any other statutes or implementing regulations of any other Governmental Entity) relating to, regulating, or having jurisdiction over, any environmental contamination, Hazardous Material, or release or threat of release of Hazardous Material.

R. Products; Product Liability.

1. Each of the Products (including all finished goods Inventory): (a) is, and at all times up to and including the sale thereof has been, manufactured, packaged, labeled, stored, handled, distributed, shipped, marketed and promoted, and in all other respects has been, in compliance in all material respects with all applicable Laws and (b) is in conformity, and at all relevant times has conformed, in all material respects to all specifications and any warranties or affirmations of fact made in all regulatory filings or set forth in any Approval or made on the container or label for such Product or in connection with its sale. There is no design or manufacturing defect with respect to the Products. The Products have an approved shelf life of three years from the date of manufacture in all territories where there is an Approval.

2. Schedule 4.1(R) sets forth the standard form of warranty that is currently applicable to the Products. No Member of the Seller Group has received any written notice any claim or threatened claim that the Products fail to meet any product warranties. No Member of the Seller Group has incurred liability arising out of any injury to, or death of, any individual as a result of the ownership, possession, or use of any Product and, to the Seller Group's knowledge, there has been no inquiry or investigation made in respect thereof by any Governmental Entity.

S. Leaflets. No more than 20% of completed patient response cards for procedures during the period between October 1, 2017 and March 31, 2019 indicate that the Products were used for valve replacement or valve repair (including leaflet replacement or leaflet repair).

T. Solvency. The Seller Group is solvent, where "solvent" means the Seller Group is able to pay all of its debts, as and when they become due and payable.

U. Surgeon Payments. In 2018, the Seller Group's payments to all surgeons in respect of consulting services in connection with the Business did not exceed $100,000, excluding payments to employees of the Seller Group.

V. Disclosure. The representations and warranties contained in this Section 4.1 and, to the knowledge of the Seller Group, in the documents, instruments and certificates delivered by the Seller Group pursuant to this Agreement do not contain any untrue or misleading statement of fact or omit to state any material fact necessary in order to prevent the statements and information contained herein and therein from being false or misleading.

Section 4.2. Representations and Warranties by the Purchaser. The Purchaser represents and warrants to the Seller Group that:

A. Existence and Qualification of the Purchaser; Due Execution, Etc. The Purchaser is a corporation duly organized, validly existing and in good standing under the Laws of the state of Delaware and has all requisite corporate power and authority to execute, deliver and perform this Agreement and the Closing Documents to be executed by it and to consummate the transactions contemplated hereby and thereby. The execution and delivery of this Agreement and the Closing Documents to be executed by the Purchaser and the consummation by the Purchaser of the transactions contemplated hereby and thereby have been duly authorized by all requisite corporate action and, assuming the due execution of this Agreement by the Seller Group, this Agreement and the Closing Documents to be executed by the Purchaser constitute valid and binding obligations of the Purchaser enforceable against it in accordance with their respective terms, subject only to applicable bankruptcy, insolvency, reorganization, moratorium or other similar Laws relating to creditors' rights generally and to general principles of equity (regardless of whether such enforcement is considered in a proceeding at law or in equity).

B. No Violation. Neither the execution or delivery by the Purchaser of this Agreement or the Closing Documents to be executed by the Purchaser nor the consummation of the transactions contemplated hereby or thereby: (i) violates or will violate any Law applicable to the Purchaser; (ii) violates or will violate any Order applicable to the Purchaser; (iii) results or will result in a breach of or default under the Certificate of Incorporation of the Purchaser or (iv) conflicts with any agreement, contract or other instrument to which the Purchaser is a party. No consent, authorization, or approval from, or registration or filing with, any Governmental Entity or other third party (not obtained or made as of the date hereof) is required to be obtained or made by or with respect to the Purchaser in order to perform its obligations under this Agreement.

C. Funds. The Purchaser has sufficient funds to ensure timely payment of the Purchase Price in accordance with this Agreement.

D. Access and Investigation. The Purchaser has been afforded access to the books and records, facilities and officers, directors, employees and other professional representatives of the Business for purposes of conducting a due diligence investigation with respect thereto. The Purchaser has conducted to its satisfaction an independent investigation and verification of all aspects of the Business and the Assets. In making its determination to proceed with the transactions contemplated by this Agreement, the Purchaser has relied solely on the results of such independent investigation and on the representations and warranties of the Seller Group expressly and specifically set forth in the Closing Documents (the "Seller Group Representations"). The Purchaser has not relied and will not rely on any representations, warranties, statements, information, documents, projections, forecasts or other material made available to the Purchaser, its agents or advisors other than the Seller Group Representations. The Seller Group Representations constitute the sole and exclusive representations, warranties, and statements (including by omission) of any kind or nature, whether written or oral, expressed or implied, statutory or otherwise (including, for the avoidance of doubt, relating to quality, quantity, condition, merchantability, fitness for a particular purpose) of any Member of the Seller Group as to any matter concerning the Business or in connection with this Agreement or the transactions contemplated by this Agreement, or with respect to the accuracy or completeness of any information provided to (or otherwise acquired by) the Purchaser, its agents or advisors in connection with this Agreement or the transactions contemplated by this Agreement and all other purported representations and warranties or statements (including by omission) are hereby disclaimed by the Seller Group.

ARTICLE V
Certain Covenants.

Section 5.1. Warranty and Insurance.

A. Warranty. The Seller Group shall be responsible for all customer warranties with respect to (i) the Inventory and (ii) all Products manufactured or sold prior to the Closing Date and in each case shall timely perform such warranty services at its own cost. The Purchaser will reasonably cooperate with the Seller Group at the Seller Group's expense in the handling of any warranty claims for the Inventory and such Products.

B. Insurance. The Seller Group at its sole cost and expense shall (i) maintain a general liability and products liability insurance policy with coverage at levels the same as carried by them prior to Closing until the fifth anniversary of the Closing Date and (ii) obtain and maintain property insurance to cover any Tangible Assets owned by the Purchaser to the extent remaining in possession of the Seller Group until delivered to the Purchaser in accordance with the Transition Services Agreement, for their replacement value as at policy inception until such Tangible Assets have been delivered to the Purchaser, in each case naming the Purchaser as an Additional Insured and in the case of property insurance, as loss payee.

Section 5.2. Cooperation Regarding Taxes; Tax Returns. From and after the Closing, each Member of the Seller Group will make available to the Purchaser, upon reasonable written request and with the Purchaser bearing responsibility for all of its out-of-pocket expenses therefor, the Seller Group's personnel or representatives under its control whose assistance or participation is reasonably required by the Purchaser in anticipation of, or preparation for, existing or future Legal Proceedings, Tax Return preparation, audits or other matters in which the Purchaser or any of its Affiliates is involved and that is related to the Seller Group or the Business. Each Member of the Seller Group will reasonably cooperate with the Purchaser, at Purchaser's expense, in the conduct of any Tax audit, claim for refund of Taxes or similar proceedings involving or otherwise relating to any of the Assets, the Business or the Seller Group (or the income therefrom or assets thereof). For purposes of this Agreement, (i) "Tax" or "Taxes" includes all federal, state, territorial, local, foreign and other taxes, assessments, or governmental charges of any kind whatsoever including, without limitation, income, franchise, capital stock, excise, property, sales, use, goods, service, service use, leasing, leasing use, gross receipts, value added, single business, alternative or add-on minimum, occupation, real and personal property, stamp, workers' compensation, severance, windfall profits, customs, duties, disability, registration, estimated, environmental (including Taxes under Internal Revenue Code Section 59A), transfer, payroll, withholding, employment, unemployment and social security taxes, or other taxes of the same or similar nature, together with any interest, penalties or additions thereon and estimated payments thereof, whether disputed or not, (ii) "Tax Return" or "Tax Returns" includes all returns, reports, information returns, forms, declarations, claims for refund, statements and other documents (including any amendments thereto and including any schedule or attachment thereto) in connection with Taxes that are required to be filed with a Governmental Entity or other tax authority, or sent or provided to another party under applicable Law, and (iii) all citations of the Internal Revenue Code of 1986, as amended, or to the treasury regulations promulgated thereunder in this Agreement shall include any amendments or successor provisions thereto.

Section 5.3. Further Assurances. Each party agrees that at or subsequent to the Closing, upon the written request of the other party, it will promptly execute and deliver or cause to be promptly executed and delivered any further assignment, instruments of transfer, bills of sale or conveyances, and shall otherwise cooperate with the other party, all to the extent reasonably necessary or desirable to vest fully in the Purchaser all of the Seller Group's right, title and interest in and to the Assets or to otherwise confirm the transactions contemplated hereby, including without limitation any filings or correspondence with any regulatory agency, notified body or other person regarding Approvals, product recalls, adverse event reports and the like. To the extent that an attempted assignment or transfer of any Purchased Contract would constitute a breach thereof, this Agreement shall not constitute an assignment or attempted assignment thereof. In such a case, the relevant Member of the Seller Group shall establish with the Purchaser any back-to-back arrangement reasonably requested by the Purchaser in order to provide for the Purchaser the benefits intended to be assigned under any such Purchased Contract. Each Member of the Seller Group also agrees that it shall, at the reasonable request of the Purchaser and at Purchaser's expense, use commercially reasonable efforts to enforce (a) the terms of any confidentiality, non-disclosure or non-competition agreement between any Member of the Seller Group and any third party and (b) any provisions relating to confidentiality, non-disclosure or non-competition contained in any other agreement to which any Member of the Seller Group is party, in each case if the Purchaser is harmed, or has a reasonable expectation of harm, due to the breach or potential breach of any such agreement or provisions by a third party.

Section 5.4. Restrictive Covenants.

A. Covenant Not to Compete or Disparage.

1. Each Member of the Seller Group agrees that no Member of the Seller Group nor any of its current natural person Affiliates nor any of its Affiliates that are not natural persons will, directly or indirectly, own, manage, operate, finance, join, or control, or participate in the ownership, management, operation, financing or control of, or be associated as a partner, lender, investor or representative in connection with, or appoint any director, manager or other representative of, any profit or not-for-profit business or enterprise that: (a) engages in any Purchaser Competitive Activity, or (b) disparages the Purchaser, the Business or the Products in any material way. "Purchaser Competitive Activity" shall mean the design, manufacture, sale or distribution of (i) any of the Products other than any contractual arrangement between a Member of the Seller Group and the Purchaser, (ii) patches for cardiac repair or replacement (excluding catheter-delivered repair or catheter-delivered replacement devices), (iii) conduits formed from flat patches for cardiac repair or replacement; or (iv) any products used in vascular repair or replacement. The Seller Group shall not be considered to be engaged in a Purchaser Competitive Activity if it consummates a Conduit Transaction (as defined in the License Agreement) with a Conduit Offeror (as defined in the License Agreement) after having fully complied with the terms and conditions of Section 6.1(a) of the License Agreement. The Seller Group shall not be considered to be engaged in a Purchaser Competitive Activity if it consummates a Dura Transaction (as defined in the License Agreement) with a Dura Offeror (as defined in the License Agreement) after having fully complied with the terms and conditions of Section 6.1(b) of the License Agreement.

2. Purchaser agrees that neither Purchaser nor any of its Affiliates will disparage any Member of the Seller Group in any material way.

3. Notwithstanding the foregoing, this Section 5.4(A) shall not prohibit or restrict the ability of any Member of the Seller Group to beneficially own 5% or less of the outstanding stock of any company engaging in Purchaser Competitive Activity provided such stock is publicly traded on a nationally recognized securities exchange.

B. Non-Solicitation; Non-Disclosure; Non-Interference.

1. No Member of the Seller Group shall (a) at any time during a period of three (3) years commencing on the Closing Date directly or indirectly solicit, induce or attempt to induce to enter the employ of the Seller or any other person or entity (i) any Specified Employee (if actually employed by the Purchaser following Closing) or (ii) any employees of the Purchaser made known to the Seller Group by virtue of the transactions contemplated hereby or (b) at any time after the Closing directly or indirectly divulge, or permit to be divulged to others, or use in any way any Proprietary Information. As used herein, the term "Proprietary Information" shall mean all confidential information concerning the Purchaser, the Business and the Assets, including client and customer lists, trade secrets, data, information, documents, inventions, developments, or forms owned or used by any Member of the Seller Group (on or prior to the Closing Date) included in the Assets transferred to the Purchaser pursuant to this Agreement, whether or not any of the foregoing is published or unpublished, protected or susceptible to protection under patent, trademark, copyright or similar laws and whether or not any party has elected to secure or attempted to secure such protection; provided however, that a Member of the Seller Group may disclose any Proprietary Information solely to the extent and in the circumstances reasonably (i) needed to be disclosed to a court of competent jurisdiction in order for such Member to pursue any claim against the Purchaser hereunder; (ii) required to be disclosed by a court of competent jurisdiction or any regulatory authority; or (iii) required by Law to be disclosed to a Governmental Entity; provided, however, that such Member provides to the Purchaser reasonable advance opportunity to seek *in camera* or other protection with respect to such disclosure. No Member of the Seller Group shall, whether on its own behalf or on behalf of any of its Affiliates or in conjunction with any Person, directly or indirectly interfere with the business relationship that the Purchaser has or may have with any customer or supplier to the Business.

2. Purchaser shall not at any time during a period of three (3) years commencing on the Closing Date directly or indirectly solicit, induce or attempt to induce to enter the employ of the Purchaser or any other person or entity any employees (other than the Specified Employees) of the Seller Group.

C. Equitable Relief. Each Member of the Seller Group and the Purchaser each acknowledge that any breach of the covenants contained in Section 5.4(A) and (B) would cause an irreparable injury to the non-breaching party and that damages and remedies at law for any breach of any such covenant would be inadequate. Each Member of the Seller Group and the Purchaser acknowledge that, in addition to any other remedies available to the non-breaching party, the non-breaching party shall, without the necessity of proving actual damages or posting any bond or other security, be entitled to injunctive relief and other equitable relief to prevent a breach of any such covenant.

D. Reasonableness of Restrictions. Each Member of the Seller Group acknowledges that (i) the goodwill associated with the Business prior to the transactions contemplated by this Agreement is an integral component of the value of the Business and is reflected in the value of the consideration being paid for the Assets, and (ii) the agreements of the Seller Group set forth herein are necessary to preserve the value of the Business following the consummation of the transactions contemplated by this Agreement and are a material inducement to the Purchaser entering into this Agreement. Each Member of the Seller Group also acknowledges that the limitations to the scope of activity agreed to in this Agreement are reasonable and necessary to protect the legitimate business interests of the Purchaser, which include the protection of (x) valuable confidential information related to the Business, (y) substantial relationships with customers of the Business and (z) customer goodwill associated with the ongoing Business, because, among other things: (A) the Business is in a highly competitive industry, (B) each Member of the Seller Group has had access to and in some cases shall continue to have access to, trade secrets and know-how of the Business for a period of time and (C) each Member of the Seller Group is expected to benefit from the transactions contemplated by this Agreement.

E. Judicial Determinations. It is the desire and intent of the parties to this Agreement that the provisions of this Section 5.4 be enforced to the fullest extent permissible under the Laws and public policies applied in each jurisdiction in which enforcement is sought. If any particular provision or portion of this Section 5.4 shall be adjudicated to be invalid, ineffective or unenforceable, this Section 5.4 shall be deemed automatically amended to delete therefrom such provision or portion adjudicated to be invalid, ineffective or unenforceable, such amendment to apply only with respect to the operation of such provision in the particular jurisdiction with respect to which adjudication is made.

Section 5.5. Discharge of Liabilities. Without limiting the provisions of Sections 3.2 or 6.1 hereof, each Member of the Seller Group acknowledges that the Seller Group is retaining all Excluded Liabilities. Each Member of the Seller Group hereby jointly and severally agrees and covenants that it shall, at all times following Closing, perform, pay or discharge, to the extent not theretofore performed, paid or discharged, any and all Excluded Liabilities.

Section 5.6 Transfer Taxes. All excise, sales, use, goods and services, transfer, stamp duty, and all other similar types of taxes that become due and owing in connection with the sale of the Assets ("Transfer Taxes") shall be borne 50% by the Seller Group, on the one hand, and 50% by Purchaser, on the other; provided, however that the Seller Group's liability for Transfer Taxes and License Taxes (as defined in the License Agreement) shall not exceed [***] in the aggregate. Transfer Taxes shall each be paid by the respective parties either on receipt of a relevant tax invoice or fourteen (14) days prior to the due date payable to the relevant tax authority ("Tax Revenue Authority"). If any delay occurs in the payment of the Transfer Taxes, then the party delayed in remitting payment shall be responsible for payment of any penalties or interest that may be charged by the relevant Tax Revenue Authority in respect of such delayed payment.

Section 5.7. Customer Transition. In order to facilitate the proper payment of invoices and the submission of new orders following the Closing Date, and to provide otherwise for a smooth transition of the Business, the Purchaser and the Seller Group shall reasonably cooperate in the transition of customers to the Purchaser according to the Transition Services Agreement following the Closing Date. Each Member of the Seller Group acknowledges that it may receive payment of accounts receivable of the Purchaser, and vice versa. To the extent that any Member of the Seller Group receives any payments that should have been paid to the Purchaser, the Seller Group shall pay over to the Purchaser the amount of such payments within five (5) Business Days after the end of each calendar month. To the extent that the Purchaser receives any payments that should have been paid to any Member of the Seller Group, the Purchaser shall pay over to the Seller Group the amount of such payments within five (5) Business Days after the end of each calendar month. For a period of twelve (12) months following the Closing Date, the Seller Group shall immediately forward to the Purchaser all Product orders received from any customer.

Section 5.8. Regulatory Matters. The Seller Group agrees to, and to cause its Affiliates and other business associates to, cooperate with the Purchaser following the Closing Date, at Purchaser's expense, to transfer all Approvals to the Purchaser or its designee, to the extent legally transferable. Each Member of the Seller Group grants to the Purchaser the right to refer to the Seller Group's regulatory filings related to the manufacture, marketing, sale and distribution of each of the Products to the extent not properly included in the Assets. Upon written request from the Purchaser, the Seller Group will supply the Purchaser with copies of such filings. The Seller Group, at its own expense, shall seek in good faith to obtain CE mark certification for all Products under the MDR before August 1, 2023. This shall include, but not be limited to, creating new technical documentation (as defined under the MDR), and becoming compliant, and maintaining compliance, with ISO 14160, ISO 10993 and ISO 22442. In addition to and not in replacement of the foregoing obligation, the Seller Group and the Purchaser shall use reasonable efforts to timely obtain CE mark certification for the Products for the Purchaser under the MDR, but the Seller Group and the Purchaser accept and acknowledge that timing of certification depends upon full adoption of the MDR, EU regulators, and the vendors used. The Seller Group, at its own expense, shall seek in good faith to obtain approval for all Products from the Therapeutic Goods Administration by March 31, 2021.

Section 5.9. Transition of Certain Employees. Notwithstanding anything in this Agreement to the contrary, the Seller Group agrees that the Purchaser may offer employment to any Specified Employee. The Seller Group shall be responsible for providing termination notices to the Specified Employees who elect to be employed by the Purchaser and for otherwise effecting such termination in compliance with applicable Laws. The Seller Group shall satisfy any amounts owing to such Specified Employees at the time of their termination, including, but not limited to, wages owed, any amount owing for accrued vacation, any reimbursement of expenses and any other amounts required to be paid under applicable Law.

Section 5.10. Books and Records. The Seller Group shall take all commercially reasonable efforts to ensure that a copy of all records of the Seller Group, to the extent constituting Assets, are provided to the Purchaser at Closing or as quickly thereafter as is practicable.

Section 5.11. Allocation of Purchase Price. The Seller Group and the Purchaser agree to negotiate in good faith and agree upon an allocation of the consideration payable hereunder amongst the Assets for tax purposes within a reasonably prompt period following the Closing. The Seller Group shall have sole authority to determine any relevant allocation of the consideration payable among its Members but agrees that the consideration payable to each Member shall be no less than the fair value of the assets sold to Purchaser by such Member hereunder. The Purchaser shall have no obligation to see to the application of the consideration as between the Members of the Seller Group. The Seller Group and the Purchaser agree that their respective tax returns (including IRS Form 8594 – Asset Acquisition Statement) relating to the Transfer of the Assets hereunder will be consistent with such allocation.

Section 5.12. Public Statements. The parties shall consult with each other before issuing any press release or otherwise making any public statements with respect to this Agreement or the transactions contemplated hereby, and no party shall issue any press release or make any public statement prior to obtaining the other party's prior approval, which approval shall not be unreasonably withheld. No such approval shall be necessary to the extent disclosure may be required by applicable Law or the rules of any stock exchange. The Seller Group acknowledges that the Purchaser may be required to file this Agreement and one or more of the Closing Documents with the United States Securities and Exchange Commission.

Section 5.13. Financial Statements. Parent shall use reasonable efforts to, as promptly as practicable after the date hereof and no later than October 31, 2019, provide the Purchaser with (i) the audited financial statements of the Business, including the balance sheet of the Business as of December 31, 2018, and the statement of comprehensive income, the statement of changes in stockholders' equity, the statements of operations and cash flows of the Business for the fiscal year ended December 31, 2018 and all related footnotes thereto, audited in accordance with auditing standards generally accepted in the United States of America (the "Audited Financial Statements"); (ii) the unaudited financial statements of the Business for applicable interim periods required for the Purchaser's filings with the US Securities and Exchange Commission (the "SEC"), including the balance sheet as of September 30, 2019, statements of operations and cash flows for the nine-month period ended September 30, 2019, and all related footnotes thereto (the "Unaudited Financial Statements" and together with the Audited Financial Statements, the "S-X Financial Statements"), and (iii) in the case of the Audited Financial Statements, a report of the independent auditor. The expenses relating to the preparation of the Audited Financial Statements shall be borne 50% by the Seller Group, on the one hand, and 50% by Purchaser, on the other. In each case, the S-X Financial Statements shall be prepared from the books and records of the Seller Group that were prepared in accordance with International Financial Reporting Standards (with no exception or qualification thereto) applied on a consistent basis throughout the periods involved, and present fairly in all material respects the financial position and results of operations of the Business as of the dates and for the periods shown therein. The Seller Group shall permit the Purchaser and its representatives to have reasonable access to all such books, records and other documents of each Member of the Seller Group as are, or would be, necessary to calculate and confirm the S-X Financial Statements.

Section 5.14. Distributors and Agents. The Seller Group, in consultation with the Purchaser, shall be responsible for notifying the distributors and agents listed on Schedule 5.13 (the "Dealers"), who distribute and/or sell Product on the Seller Group's behalf as of the Closing Date, immediately following the Closing, of the termination of their rights to distribute and/or sell the Products subject to the conditions in the applicable agreement and laws. To the extent that any payments are necessary to any Dealer to ensure a smooth transition of the Business, including to obtain customer lists or cooperation in transferring Product registrations, the Seller Group and the Purchaser shall [***].

Section 5.15. Limits on the Purchaser.

A. The Purchaser shall not sell any of the Products, or any other shapes or sizes of the Products, (i) to any third party manufacturer of medical devices or (ii) as a product that competes directly with any of the products of the Seller Group that are (a) commercialized or under active product development, for itself or for third parties, as of the Closing Date and (b) listed on Schedule 5.15, each of which the Seller Group represents and warrants it is actively developing as of the date hereof. [***].

B. The Purchaser shall not use, file applications, or seek to register any trademarks that include the ADAPT Assets (including those shown on Schedule 1.2 (B)(7)) or use any name, mark, or word that conflicts with the Seller Group's intellectual property rights in the ADAPT Assets.

Section 5.16. Limits on the Seller Group. The Seller Group will not use the trademarks identified on Schedule 1.2(B)(7) after the Closing Date.

Section 5.17 Limited Use of ADAPT Name. The Purchaser may use the Seller Group's "ADAPT" trademark and trade name solely on the packaging in connection with: (i) the sale of Inventory sold to the Purchaser and previously packaged by the Seller Group, and (ii) the sale of any Product purchased by the Purchaser from Members of the Seller Group under the Transition Services Agreement using packaging of the Seller Group as of the Closing Date.

Section 5.18 Revocation. The Seller Group shall revoke any and all licenses or rights previously granted to any third party by the Seller Group to use any Asset Transferred to the Purchaser hereunder by October 18, 2019.

Section 5.19 License-Back. The Purchaser grants back to the Seller Group a non-exclusive, royalty-free, perpetual, transferable, and sublicensable right and license to the clinical data transferred to Purchaser as an Asset under this Agreement for use outside of the Exclusive Fields (as defined in the License Agreement).

ARTICLE VI
Indemnification; Survival of Representations, Warranties and Covenants.

Section 6.1. Indemnification by Seller Group. Each Member of the Seller Group hereby jointly and severally agrees to defend, hold harmless and indemnify the Purchaser and its Affiliates and their respective employees, officers, directors, stockholders, partners and representatives ("Purchaser Parties") from and against any actual damages or losses, assessments, claims, costs and expenses (including without limitation reasonable attorneys' fees and disbursements) which arise out of or relate to:

A. any misrepresentation or inaccuracy in, breach of or failure to comply with, any of the representations, warranties, covenants or agreements of any Member of the Seller Group contained in this Agreement, including without limitation in the Disclosure Schedule, or in any other Closing Document or in any certificate or other instrument or document furnished or to be furnished by any Member of the Seller Group pursuant to this Agreement or any of the Closing Documents or in connection with the transactions contemplated hereby or thereby;

B. any Excluded Liabilities and any other Liabilities of any Member of the Seller Group or the Business, other than the Assumed Liabilities;

C. any recalls or replacements requested or required by any competent Governmental Entity or otherwise deemed appropriate by mutual agreement of the Parent and the Purchaser related to any Product manufactured, sold or distributed prior to the Closing;

D. any claim, demand, action or proceeding initiated by any third party based upon infringement of a patent, trademark, copyright or trade secret, or similar intellectual property rights as a result of the use of the Intellectual Property or conduct of the Business;

E. any negligent or fraudulent act or omission or willful misconduct of any Member of the Seller Group or any of their respective employees, agents or representatives in the performance of this Agreement;

F. any claim, demand, action or proceeding initiated by any shareholder of any Member of the Seller Group based on the Member(s) of the Seller Group entering into this Agreement or consummating the transactions set forth herein;

G. any claim, demand, action or proceeding initiated by any third party alleging that any Product manufactured, distributed or sold prior to the Closing resulted in death, harm or injury to a person; or

H. without limiting the generality of the preceding clauses, any Taxes attributable to the Business for all periods prior to Closing, and all other Taxes of the Seller Group, in each case regardless of whether such losses, assessments, Liabilities, claims, damages, costs and expenses, or the facts or circumstances relating thereto, were disclosed hereunder or in the Disclosure Schedule or otherwise.

All such losses, assessments, liabilities, claims, damages, costs and expenses so arising out of or relating to any of the foregoing clauses (A) through (H), inclusive, of this Section 6.1, or the matters described therein, are referred to hereinafter as the "Purchaser's Losses."

Section 6.2. Indemnification by the Purchaser. The Purchaser hereby agrees to defend, hold harmless and indemnify the Seller Group and its employees, officers, directors, stockholders, partners and representatives ("Seller Parties") from and against any losses, assessments, Liabilities, claims, damages, costs and expenses (including without limitation reasonable attorneys' fees and disbursements) to the extent arising out of:

A. any misrepresentation or inaccuracy in, breach of or failure to comply with, any of the representations, warranties, covenants or agreements of the Purchaser contained in this Agreement or in any other Closing Document or in any certificate or other instrument or document furnished or to be furnished by the Purchaser pursuant to this Agreement or any of the Closing Documents or in connection with the transactions contemplated hereby or thereby;

B. any negligent or fraudulent act or omission or willful misconduct of any Purchaser or any of their respective employees, agents or representatives in the performance of this Agreement;

C. the Purchaser's failure, following the Closing, to perform, pay or discharge in accordance with their respective terms, the Assumed Liabilities (collectively, the "Seller's Losses").

Section 6.3. Survival of Representations, Warranties and Covenants; Baskets; Cap.

A. Survival . The representations and warranties contained in this Agreement shall survive the Closing for a period ending on the earlier of (x) the date that is four years following the Closing Date and (y) twelve months following the expiration or the termination of the Transition Services Agreement, except with respect to (i) the representations and warranties set forth in Sections 4.1(A) (Corporate Existence and Qualification; Due Execution; Etc.), 4.1(B) (No Violation), 4.1(G) (Title to Assets), 4.1(P) (Broker's Fees), 4.2(A) (Corporate Existence and Qualification; Due Execution; Etc.), and 4.2(B) (No Violation), which shall survive indefinitely, and (ii) the representations and warranties set forth in Sections 4.1(J) (Compliance with Laws) and 4.1(K) (Employees) which shall survive until ninety (90) calendar days following the expiration of the applicable statute(s) of limitation relating to any claim giving rise to the Purchaser's Losses related thereto. Notwithstanding the foregoing, any claims asserted in good faith with reasonable specificity (to the extent known at such time) and in writing by notice from the non-breaching party to the breaching party prior to the expiration date of the applicable survival period shall not thereafter be barred by the expiration of such survival period and such claims shall survive until finally resolved. The covenants and other agreements contained in this Agreement which contemplate performance following the Closing shall survive the Closing indefinitely.

C. Basket. The Purchaser Parties shall not be entitled to recover any of Purchaser's Losses pursuant to Section 6.1 unless and until the Purchaser Parties' aggregate claims therefor exceed $90,000 (the "Basket") at which point the Indemnitor shall be obligated to reimburse the Indemnitee for all of the Purchaser's Losses; provided, however, that this sentence shall not apply to (and be disregarded in its entirety with respect to) any breach by any Member of the Seller Group of its obligations under Sections 2.5, 2.6 and 3.2 and Article 5 of this Agreement. The Seller Parties shall not be entitled to recover any of Seller's Losses pursuant to Section 6.2 unless and until the Seller Parties' aggregate claims therefor exceed $90,000 at which point the Indemnitor shall be obligated to reimburse the Indemnitee for all of the Seller's Losses; provided, however, that this sentence shall not apply to (and be disregarded in its entirety with respect to) any breach by the Purchaser of its obligations under Section 3.1 or Article 5 of this Agreement.

D. Caps. The aggregate amount of all Losses for which the Seller Group shall be liable pursuant to Section 6.1 shall not exceed the amounts actually received by the Seller Group as purchase price hereunder and the licensing fee received by Parent, ARPL and ABPL under the License Agreement (together, the "Cap"), and the aggregate amount of all Losses for which the Purchaser shall be liable pursuant to Section 6.2 shall not exceed the Cap.

E. Exceptions. None of the limitations of this Article 6 shall apply in the case of intentional misrepresentation, intentional breach of a covenant, or intentional fraud.

F. This Article 6 shall survive the Closing and shall thereafter remain in full force and effect.

Section 6.4. Procedures.

A. In the event that any Legal Proceeding shall be threatened or instituted in respect to which indemnification may be sought by one party hereto from another party under the provisions of this Article 6, the party seeking indemnification ("Indemnitee") shall, reasonably promptly after acquiring actual knowledge of such threatened or instituted Legal Proceeding, cause written notice in reasonable detail of such threatened or instituted Legal Proceeding covered by this indemnification, to be forwarded to the other party from which indemnification is being sought ("Indemnitor"); provided, however, that the failure to provide such notice as of any particular date as aforesaid will not affect any rights to indemnification hereunder, except to the extent, and only to such extent, that such failure to provide such notice actually and materially prejudices the Indemnitor's ability to adequately defend such Legal Proceeding or actually and materially increases the amount of Purchaser's or Seller's Losses, as applicable. In the case of any Loss not involving a Legal Proceeding, the Indemnitee shall, reasonably promptly after acquiring actual knowledge of such Loss, cause written notice in reasonable detail of such Loss covered by this indemnification, to be forwarded to the Indemnitor; provided, however, that the failure to provide such notice as of any particular date as aforesaid will not affect any rights to indemnification hereunder, except to the extent that such failure to provide notice actually and materially increases the amount of Purchaser's or Seller's Losses, as applicable.

B. In the event of the initiation of any Legal Proceeding against an Indemnitee by a third party, the Indemnitor shall have the right after the receipt of the notice described in Section 6.4(A), at its expense, to appoint counsel to represent Indemnitee, which shall be reasonably satisfactory to the Indemnitee, and (subject to Section 6.4(C)) to defend against, negotiate, settle or otherwise deal with any Legal Proceeding or demand that relates to any Purchaser's Losses or Seller's Losses, as the case may be, indemnified against hereunder, and, in such event, the Indemnitee will reasonably cooperate with the Indemnitor and its representatives in connection with such defense, negotiation, settlement or dealings (and the Indemnitee's reasonable costs and expenses arising therefrom or relating thereto shall constitute Purchaser's Losses, if the Indemnitee is the Purchaser, or Seller's Losses, if the Indemnitee is the Seller Group); provided, however, that the Indemnitor shall actively and diligently defend the Indemnitee; and provided further that the Indemnitee may directly participate in any such Legal Proceeding so defended with counsel of its choice at its own expense, subject to the Indemnitor's right to control the defense for which it bears the expense. If the Indemnitor fails to take reasonable steps necessary to defend diligently such third party claim within 10 Business Days after receiving written notice from the Indemnitee that the Indemnitee reasonably believes the Indemnitor has failed to take such steps or if the Indemnitor has not undertaken fully to indemnify the Indemnitee in respect of all such Purchaser's or Seller's Losses, as the case may be, relating to the matter and as required hereunder, the Indemnitee may assume its own defense, and, in such event (a) the Indemnitor will be responsible for all Purchaser's or Seller's Losses, as the case may be, reasonably paid or incurred in connection therewith, and (b) the Indemnitor shall, in any case, reasonably cooperate, at its own expense, with the Indemnitee and its representatives in connection with such defense.

C. Without the prior written consent of the Indemnitee, which shall not be unreasonably withheld, the Indemnitor will not enter into any settlement of any third party claim that would lead to liability or create any financial or other obligation on the part of the Indemnitee for which the Indemnitee is not entitled to indemnification hereunder or which would otherwise adversely affect the Indemnitee, the Assets or the Business.

D. An Indemnitee shall use commercially reasonable efforts to pursue and collect any amounts payable under insurance policies on account of Purchaser's Losses (if the Indemnitee is the Purchaser) or Seller's Losses (if the Indemnitee is the Seller Group), but only if doing so will not result in (a) an increase of greater than 10% in premiums due then or in the future to procure comparable insurance or an increase in deductibles of greater than 10%; or (b) a decrease of greater than 10% in the levels of insurance or a change in the risks insured against; or (c) prejudice to the Indemnitee's claims or rights to indemnification hereunder.

E. After any final judgment or award shall have been rendered by a Governmental Entity of competent jurisdiction, or a settlement shall have been consummated, or the Indemnitee and the Indemnitor shall have arrived at a mutual agreement with respect to each separate matter alleged to be indemnified by the Indemnitor hereunder, the Indemnitee shall forward to the Indemnitor notice of any sums due and owing by it with respect to such matter, and the Indemnitor shall pay all of the sums so owing to the Indemnitee by wire transfer or certified or bank cashier's check within 10 Business Days after the date of such notice. Any and all Purchaser's Losses or Seller's Losses, other than those described in the preceding sentence (including Purchaser's Losses or Seller's Losses incurred in the absence of any threatened or pending Legal Proceeding, or Purchaser's Losses or Seller's Losses incurred after any such Legal Proceeding has been threatened or instituted but prior to the rendering of any final judgment or award in connection therewith), shall be paid by the Indemnitor on a current basis, and, without limiting the generality of the foregoing, the Indemnitee shall have the right to invoice the Indemnitor for such Purchaser's Losses or Seller's Losses, as the case may be, as frequently as it deems appropriate, and the amount of any such Purchaser's Losses or Seller's Losses, as the case may be, which are described or listed in any such invoice shall be paid to the Indemnitee, by wire transfer or certified or bank cashier's check, within 10 Business Days after the date of such invoice. Notwithstanding the foregoing, the Purchaser's claims for indemnification pursuant to this Article 6 shall be satisfied from the Holdback Amounts, from any other amounts that may then be owing from the Purchaser to the Seller Group under Section 2.2 (e), (f), (g) or (h), and then, to the extent those funds are insufficient to pay all such claims, directly by the Seller Group pursuant to this Section 6.4.

Section 6.5. Tax Treatment of Indemnification Payments. To the maximum extent permitted by law, it is the intention of the parties to treat any indemnity payment made under this Agreement as an adjustment to the Purchase Price.

Section 6.6. No Double Recovery. An Indemnitee shall not be entitled to recover or make a claim under Section 6.4 to the extent such Indemnitee has previously actually recovered the full cash amount of such its losses pursuant to another provision of this Agreement.

Section 6.7. Exclusive Remedies. The parties acknowledge and agree that their sole and exclusive remedy with respect to any and all claims (other than claims arising from intentional misrepresentation, intentional breach of a covenant or fraud or claims arising in connection with the bankruptcy of any party) for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement, shall be pursuant to the indemnification provisions set forth in this Article VI. In furtherance of the foregoing, each party hereby waives, to the fullest extent permitted under Law, any and all rights, claims and causes of action for any breach of any representation, warranty, covenant, agreement or obligation set forth herein or otherwise relating to the subject matter of this Agreement it may have against the other parties hereto and their affiliates and each of their respective representatives arising under or based upon any Law, except pursuant to the indemnification provisions set forth in this Article VI. Notwithstanding the foregoing, nothing in this Section 6.7 shall limit the rights of any party to seek equitable remedies under this Agreement.

ARTICLE VII
Miscellaneous.

Section 7.1. Entire Agreement. This Agreement (including the Disclosure Schedule) together with all other Closing Documents (i) supersedes any other prior or contemporaneous agreement, understanding, promise, representation or express or implied commitment or obligation, whether written or oral, that may have been made or entered into by any party or any of their respective Affiliates (or by any director, officer or representative thereof) with respect to the subject matter hereof and (ii) constitutes the entire agreement of the parties hereto with respect to the matters provided for herein. Any other agreements, promises, representations, or assurances made by either party to this Agreement or entered into by the parties hereto on or before the date of this Agreement, whether oral or written, relating to the subject matter of this Agreement are of no force or effect. No investigation or receipt of information by or on behalf of the Purchaser will diminish or obviate any of the representations, warranties, covenants or agreements of the Seller Group under this Agreement or the conditions to obligations of the Purchaser under this Agreement.

Section 7.2. Amendments. No amendment, modification or alteration of the terms or provisions of this Agreement shall be binding unless the same shall be in writing and duly executed by the Purchaser and each Member of the Seller Group.

Section 7.3. Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the parties hereto, and their respective successors in law (including administrators) and permitted assigns. This Agreement is freely assignable by the Purchaser but may not be assigned by the any Member of the Seller Group, including without limitation by operation of law, without the prior written consent of the Purchaser; provided, however, that any such assignment by the Purchaser shall not relieve it of its obligations hereunder. For purposes of this Section 7.3, the term “assignment” shall include the consolidation or merger of a party with and into a third party or the sale of all or substantially all of the assets or business of a party. Any attempted assignment in violation of this Section 7.3 shall be null and void.

Section 7.4. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original for all purposes and all of which together shall constitute one and the same instrument.

Section 7.5. Headings and Section References. The headings of the sections and paragraphs of this Agreement are included for convenience only and are not intended to be a part of, or to affect the meaning or interpretation of, this Agreement. All section references herein, unless otherwise clearly indicated, are to sections within this Agreement.

Section 7.6. No Other Warranties, Representations, Covenants or Duties. Except as expressly provided in this Agreement, the parties disclaim any express or implied warranties, representations, covenants or duties in connection herewith.

Section 7.7. Waiver. No failure or delay by either the Purchaser or the Seller Group in exercising any right, power or privilege hereunder shall operate as a waiver thereof; nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided are cumulative and not exclusive of any rights or remedies otherwise provided by law.

Section 7.8. Expenses. The Seller Group and the Purchaser shall each pay all of their own respective costs and expenses incurred in connection with the negotiation of this Agreement and the transactions contemplated hereby, except as provided otherwise herein.

Section 7.9. Notices. Any notice, request, instruction or other document to be given under this Agreement by any party hereto to any other party shall be in writing and delivered by email and delivered personally, dispatched by facsimile transmission or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid:

If to any Member of the Seller Group, at the following address:

Toowong Tower, Level 3,
9 Sherwood Rd,
Toowong QLD 4066 Australia Attn: General Counsel
Email: generalcounsel@admedus.com

If to the Purchaser, at the following address:

63 Second Avenue
Burlington, Massachusetts 01803
Attn.: Legal Department
Facsimile: 781-425-5049
Email: legal@lemaitre.com

or at such other address for a party or as shall be specified by like notice. Any notice that is delivered personally in the manner provided herein shall be deemed to have been duly given to the person or entity to which it is directed upon actual receipt by such party (or its agent for notices hereunder). Any notice by facsimile transmission shall be deemed to have been duly given to the person or entity to which it is addressed upon transmission and confirmation of receipt. Any notice that is addressed as provided herein and mailed by registered or certified mail shall be conclusively presumed to have been duly given to the person or entity to which it is addressed at the close of business, local time of such party, on the third calendar day after the day it is so placed in the mail. Any notice that is addressed as provided herein and sent by a nationally recognized overnight courier service shall be conclusively presumed to have been duly given to the person or entity to which it is addressed at the close of business, local time of such person or entity, on the next Business Day following its deposit with such courier service for next day delivery.

Section 7.10. Governing Law. This Agreement and the legal relations among the parties hereto shall be governed and construed in accordance with the substantive Laws of the State of Delaware, without giving effect to the principles of conflict of laws thereof.

Section 7.11. Severability. If any provisions hereof shall be held by any court of competent jurisdiction to be illegal, void or unenforceable, such provisions shall be of no force and effect, but the illegality or unenforceability shall have no effect upon, and shall not impair the enforceability of, any other provision of this Agreement.

Section 7.12. Rights of Third Parties. Nothing expressed or implied in this Agreement is intended or will be construed to confer upon or give any person or entity other than the parties hereto and their respective successors and permitted assigns any rights or remedies under or by reason of this Agreement or any transaction contemplated hereby.

Section 7.13. Group Liability. Each Member of the Seller Group is and shall be jointly and severally liable for the covenants, conditions, provisions and agreements of this Agreement to be kept, observed and performed by any Member of the Seller Group; and the act or signature of, or notice from or to, any one or more of them with respect to this Agreement shall be binding upon each and all of the other Members of the Seller Group with the same force and effect as if each and all of them had so acted or signed, or given or received such notice.

Section 7.14. Consent to Jurisdiction. Each party agrees that, in the event such party elects to initiate litigation against the other party, such party shall, and may only, file such litigation in the state or federal courts located in the State of Delaware. Each party hereby expressly and irrevocably waives any claim or defense in any action or proceeding brought in said jurisdiction and courts based on any alleged lack of personal jurisdiction, improper venue, forum non conveniens or any similar basis.

Section 7.15. Certain Definitions and Interpretive Matters.

A. Certain Definitions. Unless the context otherwise requires, (i) the term "Affiliate" means, with respect to any person, a person that directly, or indirectly through one or more intermediaries, controls, or is controlled by, or is under common control with, that other person, where "control" means, for purposes of the definition of "Affiliate", having direct or indirect power to direct or cause the direction of the management and policies of a person, whether through the ownership of voting securities, by contract, or otherwise; (ii) "Business Day" means each day other than a Saturday, Sunday or a day upon which national banks in Boston, Massachusetts are closed for ordinary domestic banking business; (iii) "Disclosure Schedule" or "Schedules" means the Schedules attached hereto, which Schedules are incorporated herein and made a part hereof fully as if the same were herein set forth in their entirety; (iv) "Excluded Physical Assets" means the physical assets set forth in Schedule 7.14; (v) each accounting term not otherwise defined in this Agreement has the meaning assigned to it in accordance with GAAP, and references to "GAAP" shall be to United States Generally Accepted Accounting Principles, consistently applied; (vi) the term "Governmental Entity" means any local, county, state, district, provincial, national or other government and any agencies, departments or instrumentalities thereof, and specifically includes any judicial or administrative body or tribunal and any notified body; (vii) the term "knowledge" means the actual knowledge of any of Wayne Paterson, David St. Denis, Kiran Bhirangi, Martha Engel, Matthew McDonnell and Mike Oswell, after reasonable inquiry; (viii) the term "Laws" means any United States or non-United States national, state, county or local statute, law, ordinance, rule, regulation, order, judgment or ruling; (ix) "Legal Proceedings" means any claim, action, suit, arbitration or judicial, administrative, investigative or other proceeding, brought by, before or under the jurisdiction of any Governmental Entity, including without limitation, lawsuits brought by third parties; (x) "Material Adverse Effect" means any fact, circumstance, event, result, occurrence, change or effect that is, or could reasonably be expected to be, materially adverse to the Assets, the Business or the financial condition, or the results of operations of the Seller Group or the Business; and (xi) "or" is disjunctive but not necessarily exclusive. All references to dollar amounts in this Agreement are to US dollars unless otherwise indicated.

B. Interpretive Matters. No provision of this Agreement will be interpreted in favor of, or against, any of the parties hereto by reason of the extent to which any such party or its counsel participated in the drafting thereof or by reason of the extent to which any such provision is inconsistent with any prior draft hereof or thereof.

IN WITNESS WHEREOF, the parties have caused this Agreement to be executed by their duly authorized respective officers, all as of the date first written above.

PURCHASER: LEMAITRE VASCULAR, INC.

By: /s/ David B. Roberts
Name: David B. Roberts
Title: President

SELLER GROUP: ADMEDUS LTD

By:/s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS REGEN PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS BIOMANUFACTURING PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS INVESTMENTS PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS (NZ) LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS (AUSTRALIA) PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS SARL

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS (SINGAPORE) PTE LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS CORPORATION

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

The schedules have been omitted pursuant to Item 601(a)(5) of Regulation S-K. Copies of these schedules will be provided to the Securities and Exchange Commission upon request. A list of those schedules appears below:

Schedules:

1.1(A)(7)	Marketing Assets
1.1(B)(7)	Other Trademark Assets
1.2(A)(10)	Other Assets
2.3	Closing Documents
2.7	Shipped Inventory Directions
2.7(e)	Value per Unit of Shipped Inventory
4.1(B)	No Violation
4.1(C)(1)	Financial Information
4.1(C)(3)	Sales Data
4.1(C)(4)	Standard Cost Summary
4.1(D)	Absence of Certain Transactions
4.1(E)(1)	Contracts
4.1(E)(2)	Defaults
4.1(E)(3)	Approvals
4.1(E)(4)	Absence of Certain Business Contracts
4.1(F)	Tangible Assets
4.1(H)	Intellectual Property
4.1(H)(4)	Disclosures of Non-Public Intellectual Property
4.1(H)(5)	Intellectual Property
4.1(I)	Litigation
4.1(J)(1)	Territories and Countries
4.1(L)	Suppliers
4.1(M)	Insurance Policies
4.1(N)	Inventory
4.1(O)	Customers
4.1(Q)	Hazardous Materials
4.1(R)	Warranties
5.13	Dealers
5.15	Limits on Purchaser
7.14	Excluded Physical Assets

EXHIBIT 4.2

DESCRIPTION OF SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE
SECURITIES EXCHANGE ACT OF 1934

The following description sets forth certain material terms and provisions of the securities of LeMaitre Vascular, Inc., or the Company, that are registered under Section 12 of the Securities Exchange Act of 1934, as amended, and is based on the provisions of our amended and restated certificate of incorporation, or certificate of incorporation, and amended and restated by-laws, or by-laws, and the applicable provisions of the Delaware General Corporation Law, or Delaware Law. The following summary does not purport to be complete and is subject to, and is qualified in its entirety by reference to, the applicable provisions of Delaware law and our certificate of incorporation and by-laws, copies of which are incorporated by reference as exhibits to the Annual Report on Form 10-K of which this Exhibit 4.2 is a part. We encourage you to read our certificate of incorporation, our by-laws and the applicable provisions of Delaware Law for additional information.

General

Our authorized capital stock consists of 37,000,000 shares of common stock, $0.01 par value per share, and 3,000,000 shares of preferred stock, $0.01 par value per share.

Common Stock

The holders of our common stock are entitled to one vote per share with respect to each matter presented to our stockholders on which the holders of common stock are entitled to vote and do not have cumulative voting rights. An election of directors by our stockholders is determined by a plurality of the votes cast by the stockholders entitled to vote on the election.

The holders of our common stock are entitled to receive ratably any dividends as may be declared by our board of directors, subject to any preferential dividend rights of outstanding preferred stock.

In the event of our liquidation or dissolution, the holders of our common stock are entitled to receive ratably all assets available for distribution to stockholders after the payment of all debts and other liabilities and subject to the prior rights of any outstanding preferred stock.

The holders of our common stock have no preemptive, subscription, redemption or conversion rights. The rights, preferences and privileges of holders of our common stock are subject to and may be adversely affected by the rights of the holders of shares of any series of preferred stock that we may designate and issue in the future.

The transfer agent and registrar for our common stock is Computershare Investor Services.

Our common stock is listed on The Nasdaq Global Market under the symbol “LMAT.”

Preferred Stock

Under the terms of our certificate of incorporation, our board of directors is authorized to issue shares of preferred stock in one or more series without stockholder approval. Our board of directors has the discretion to determine the rights, preferences, privileges and restrictions, including voting rights, dividend rights, conversion rights, redemption privileges and liquidation preferences, of each series of preferred stock. Authorizing our board of directors to issue preferred stock and determine its rights and preferences has the effect of eliminating delays associated with a stockholder vote on specific issuances. Currently, we have no shares of preferred stock outstanding.

If we decide to issue any preferred stock pursuant to this prospectus, we will describe in a prospectus supplement the terms of the preferred stock, including, if applicable, the following:

- the title and stated value;
- the number of shares we are offering;
- the liquidation preference per share;
- the purchase price;
- the dividend rate, period and payment date, and method of calculation for dividends;
- whether dividends will be cumulative and, if cumulative, the date from which dividends will accumulate;
- the relative ranking and preference of the preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs;
- the procedures for any auction and remarketing;
- the provisions for a sinking fund;
- the provisions for redemption or repurchase and any restrictions on our ability to exercise those redemption and repurchase rights;
- the listing of the preferred stock on any securities exchange or market;
- whether the preferred stock will be convertible into our common stock and, if convertible, the conversion price, or how it will be calculated, and the conversion period;
- whether the preferred stock will be exchangeable into debt securities and, if exchangeable, the exchange price, or how it will be calculated, and the exchange period;
- voting rights of the preferred stock;
- preemptive rights;
- restrictions on transfer, sale or other assignment;
- whether interests in the preferred stock will be represented by depositary shares;
- a discussion of any material U.S. federal income tax considerations applicable to the preferred stock;
- any limitations on issuance of any class or series of preferred stock ranking senior to or on a parity with the series of preferred stock as to dividend rights and rights if we liquidate, dissolve or wind up our affairs; and
- any other specific terms, preferences, rights or limitations of, or restrictions on, the preferred stock.

The preferred stock could have other rights, including economic rights that are senior to our common stock that could adversely affect the market value of our common stock. The issuance of the preferred stock may also have the effect of delaying, deferring or preventing a change in control of us without any action by the shareholders.

Anti-Takeover Effects of Delaware Law and our Certificate of Incorporation and By-laws

The provisions of Delaware law, our certificate of incorporation and our by-laws, which are discussed below, could discourage or make it more difficult to accomplish a proxy contest or other change in our management or the acquisition of control by a holder of a substantial amount of our voting stock. It is possible that these provisions could make it more difficult to accomplish, or could deter, transactions that stockholders may otherwise consider to be in their best interests or the best interests of the company. These provisions are intended to enhance the likelihood of continuity and stability in the composition of our board of directors and in the policies formulated by the board of directors and to discourage certain types of transactions that may involve an actual or threatened change of control of us. These provisions are also designed to reduce our vulnerability to an unsolicited acquisition proposal and to discourage certain tactics that may be used in proxy fights. Such provisions also may have the effect of preventing changes in our management.

Delaware Law

We are subject to the anti-takeover provisions of Section 203 of the Delaware General Corporation Law, or the DGCL. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years after the date of the transaction in which the person became an interested stockholder, unless the business combination is, or the transaction in which the person became an interested stockholder was, approved in a prescribed manner or another prescribed exception applies. For purposes of Section 203, a "business combination" is defined broadly to include a merger, asset sale or other transaction resulting in a financial benefit to the interested stockholder, and, subject to certain exceptions, an "interested stockholder" is a person who, together with his or her affiliates and associates, owns, or within three years prior, did own, 15% or more of the corporation's voting stock.

Staggered Board of Directors

Our certificate of incorporation and by-laws provide that our board of directors is divided into three classes, with staggered three-year terms. At each annual meeting of stockholders, directors will be elected to succeed those directors whose three-year terms expire. All directors elected to our classified board of directors will serve until the election and qualification of their respective successors or their earlier resignation or removal. The board of directors is authorized to create new directorships and to fill such positions so created and is permitted to specify the class to which any such new position is assigned. The person filling such position would serve for the term applicable to that class. The board of directors (or its remaining members, even if less than a quorum) is also empowered to fill vacancies on the board of directors occurring for any reason for the remainder of the term of the class of directors in which the vacancy occurred. Members of the board of directors may only be removed for cause and only by the affirmative vote of 75% of our outstanding voting stock. These provisions are likely to increase the time required for stockholders to change the composition of the board of directors. For example, in general, at least two annual meetings will be necessary for stockholders to effect a change in a majority of the members of the board of directors.

Stockholder Action; Special Meeting of Stockholders; Advance Notice Requirements for Stockholder Proposals and Director Nominations

Our certificate of incorporation and by-laws do not permit our stockholders to act by written consent. As a result, any action to be effected by our stockholders must be effected at a duly called annual or special meeting of the stockholders. Our certificate of incorporation and our by-laws also provide that special meetings of the stockholders may be called only by our board of directors pursuant to a resolution adopted by a majority of the total number of directors. Our by-laws provide that, for nominations to the board of directors or for other business to be properly brought by a stockholder before a meeting of stockholders, the stockholder must first have given timely notice of the proposal in writing to our Secretary. For an annual meeting, a stockholder's notice generally must be delivered not less than 90 days nor more than 120 days prior to the anniversary of the previous year's annual meeting. Detailed requirements as to the form of the notice and information required in the notice are specified in the by-laws. If it is determined that business was not properly brought before a meeting in accordance with our by-laws, such business will not be conducted at the meeting.

Super-Majority Voting

The DGCL provides generally that the affirmative vote of a majority of the shares entitled to vote on any matter is required to amend a corporation's certificate of incorporation or by-laws, unless the corporation's certificate of incorporation or by-laws, as the case may be, requires a greater percentage. Our certificate of incorporation requires the affirmative vote of the holders of at least 75% of our outstanding voting stock to amend or repeal any of the provisions discussed in this section of this prospectus entitled "—Anti-Takeover Effects of Delaware Law and our Certificate of Incorporation and By-laws." This 75% stockholder vote would be in addition to any separate class vote that might in the future be required pursuant to the terms of any preferred stock that might then be outstanding. In addition, a 75% vote is also required for any amendment to, or repeal of, our by-laws by the stockholders. Our by-laws may be amended or repealed by a vote of a majority of the total number of directors.

Effects of Authorized but Unissued Stock

We have shares of common stock and preferred stock available for future issuance without stockholder approval, subject to any limitations imposed by the listing standards of The Nasdaq Global Market. We may utilize these additional shares for a variety of corporate purposes including for future public offerings to raise additional capital or facilitate corporate acquisitions or for payment as a dividend on our capital stock. The existence of unissued and unreserved common stock and preferred stock may enable our board of directors to issue shares to persons friendly to current management or to issue preferred stock with terms that could have the effect of making it more difficult for a third party to acquire, or could discourage a third party from seeking to acquire, a controlling interest in our company by means of a merger, tender offer, proxy contest or otherwise. In addition, if we issue preferred stock, the issuance could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation.

Limitation of Liability and Indemnification of Officers and Directors

Our certificate of incorporation contains provisions permitted under the DGCL relating to the liability of directors. The provisions eliminate a director's liability for monetary damages for a breach of fiduciary duty, except in circumstances involving wrongful acts, such as the breach of a director's duty of loyalty or acts or omissions that involve intentional misconduct or a knowing violation of law. Further, our certificate of incorporation contains provisions to indemnify our directors and officers to the fullest extent permitted by the DGCL. We have also entered into indemnification agreements with our current and former directors and certain of our officers and expect to enter into a similar agreement with any new directors or officers.

EXHIBIT 10.30

CERTAIN IDENTIFIED INFORMATION (INDICATED BY "[***]") HAS BEEN EXCLUDED FROM THIS EXHIBIT BECAUSE IT IS BOTH NOT MATERIAL AND WOULD LIKELY CAUSE COMPETITIVE HARM TO THE REGISTRANT IF PUBLICLY DISCLOSED.

LICENSE AGREEMENT

This License Agreement ("**Agreement**") is effective October 11, 2019 (the "**Effective Date**"), by and among Admedus Ltd, a public limited company organized under the laws of Australia with an address at Toowong Tower Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia (the "**Parent**"), Admedus Regen Pty Ltd, a proprietary limited company organized under the laws of Australia with a registered address at Toowong Tower Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("**ARPL**") and Admedus Biomanufacturing Pty Ltd, a proprietary limited company organized under the laws of Australia with a registered address at Toowong Tower Level 3, 9 Sherwood Rd, Toowong QLD 4066 Australia ("**ABPL**"), (Parent, ARPL and ABPL, collectively the "**Licensor**") and LeMaitre Vascular, Inc., a Delaware corporation with an address at 63 Second Ave., Burlington, Massachusetts 01803 (the "**Licensee**"). Licensor and Licensee may be referred to herein individually as a "**Party**", or collectively as the "**Parties**".

WHEREAS, Licensor and its Affiliates (as defined below) develop, manufacture, market and sell the CardioCel, CardioCel 3D, CardioCel Neo, VascuCel, and VascuCel 3D biologic patch product lines worldwide (the "**Products**");

WHEREAS, in accordance with an Asset Purchase Agreement of even date herewith by and among Licensor and its Affiliates ("**Seller Group**") and Licensee ("**APA**"), Seller Group has agreed to convey, sell, transfer and assign to Licensee, and Licensee has agreed to purchase from Seller Group, certain assets of the Seller Group related to the manufacture, marketing, distribution and sale of the Products;

WHEREAS, simultaneously with the Closing (as defined in the APA), Licensor shall grant to Licensee certain licenses to the technology and other intellectual property of ARPL and ABPL related to the manufacture of the Products on the terms and conditions set forth herein;

WHEREAS, Licensor and its Affiliates and Licensee are parties to that certain Transition Services Agreement ("**TSA**") dated October 11, 2019, wherein Licensor has agreed to provide certain services to the Licensee related to the manufacture, marketing, distribution and sale of the Products during the Transition Period;

NOW, THEREFORE, in consideration of the mutual premises set forth above and other good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the Parties agree as follows:

1. DEFINITIONS.

(a) "**Affiliate**" means any company, partnership, joint venture or other entity, which directly or indirectly controls, is controlled by or is under common control with a respective named Party. Control shall mean the possession of more than fifty percent (50%) of the voting stock or the power to control the management and policies of the controlled entity, whether through the ownership of voting securities, by contract, or otherwise. For purposes of this License Agreement, Admedus Vaccines Pty Ltd. shall not be considered an Affiliate of Licensor.

(b) "**Bankruptcy Code**" means the United States Bankruptcy Code.

(c) "**Business Day**" means each day other than a Saturday, Sunday or a day upon which national banks in Boston, Massachusetts are closed for ordinary domestic banking business.

(d) "**Commercialization**" or "**Commercialize**" means any and all activities related to obtaining pricing and reimbursement approvals, marketing, promoting, manufacturing commercial supplies of, distributing, importing, exporting, offering for sale or selling a Product.

(e) "**Exclusive Fields**" means (i) patches for cardiac repair or replacement (excluding catheter-delivered repair or catheter-delivered replacement devices), (ii) conduits formed from flat patches for cardiac repair or replacement; and (iii) vascular repair or replacement.

(f) "**Governmental Authority**" means any US federal, state or local or any foreign government, or political subdivision thereof, or any multinational organization or authority or any authority, agency or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof), or any governmental arbitrator or arbitral body.

(g) "**Improvement**" means any modification to or derivative of a device, process, compound, system or other matter described in a Licensed Patent or enabled by the Licensed Technology, provided such modification or derivative either embodies, utilizes, is based upon, or relies upon the Licensed Technology, or if unlicensed, would infringe one or more valid claims under the Licensed Patents.

(h) "**Law**" or "**Laws**" Law or Laws means all laws, statutes, rules, regulations, orders, judgments or ordinances of any Governmental Authority.

(i) "**Legal Proceedings**" means any claim, action, suit, arbitration or judicial, administrative, investigative or other proceeding, brought by, before or under the jurisdiction of any Governmental Authority, including without limitation, lawsuits brought by third parties.

(j) "**Licensed IP**" means the Licensed Patents and the Licensed Technology and no other Excluded Asset as defined in the APA.

(k) "**Licensed Patents**" means (i) the patents listed in Schedule 1 attached hereto, (ii) all divisional, continuation, and continuation-in-part applications of any listed patent applications of Schedule 1, (iii) all patents issuing from any of the foregoing applications, (iv) all reissues, reexaminations, extensions and foreign counterparts (within the Territory) of any of the foregoing patents or that cover or claim the inventions in any of the foregoing patents, (v) all patents and patent applications including provisional patent applications anywhere in the Territory, at any time, claiming priority from any of the foregoing patent applications, including divisionals, continuations, continuations-in-part, and continued prosecution applications and (vi) any and all patents issued in the future from the foregoing patent applications described above, patents covering Licensor Improvements or which include claims covering any of the Products or any future versions thereof. The Licensed Patents shall include all of the above in existence on the Effective Date and through and including the last day of the Transition Period.

(l) "**Licensed Technology**" means all conceptions, ideas, innovations, discoveries, inventions, processes, materials, machines, formulae, equipment, improvements, enhancements, modifications, technological developments, know-how, show-how, methods, techniques, systems, designs, production systems and plans, software, documentation, clinical, technical, scientific, and medical information, regulatory information, data, programs and information and works of authorship, whether or not patentable, copyrightable, or susceptible to any other form of legal protection owned and controlled by Licensor that are necessary for and used in the manufacture or sale of the Products in existence as of the Effective Date and all Improvements to such Licensed Technology created or developed by Licensor for the manufacture of the Products. The Licensed Technology shall include all of the above in existence on the Effective Date and through and including the last day of the Transition Period for use with any approved Products as of the Effective Date.

(m) "**Non-Exclusive Fields**" means [***].

(n) "**Regulatory Approval**" means, with respect to a country in the Territory, any and all approvals, licenses, registrations, or authorizations of any Regulatory Authority required to commercially distribute, sell, or market a Product in such country, including, where applicable, (i) pricing or reimbursement approvals in such country, (ii) pre- and post-approval marketing authorizations (including any prerequisite manufacturing approval or authorization related thereto), and (iii) approval of Product labeling.

(o) "**Regulatory Authority**" means any governmental authority, including but not limited to the U.S. Food and Drug Administration ("**FDA**") or the equivalent regulatory body (including notified bodies) in a country or region with responsibility for granting licenses or approvals necessary for the marketing and sale of pharmaceutical or medical device products in a country or region.

(p) "**Regulatory Documentation**" means all (i) applications, registrations, licenses authorizations, and approvals (including Regulatory Approvals); (ii) correspondence and reports submitted to or received from Regulatory Authorities (including minutes and official contact reports relating to any communications with any Regulatory Authority) and all supporting documents with respect thereto, including all regulatory drug lists, advertising and promotion documents, safety information including adverse event files, and complaint files; and (iii) clinical data and data contained or relied upon in any of the foregoing, in each case (i), (ii), and (iii) relating to the Product.

(q) "**Territory**" means worldwide.

(r) "**Transition Period**" is the period from the Effective Date until the date of expiration or earlier date of termination of that certain Transition Services Agreement by and among Licensor and Licensee of even date herewith.

(s) "**Valid Claim**" means a claim (i) of a pending patent application included within the Licensed Patents, or (ii) of an issued and unexpired Licensed Patent that in each case of (i) and (ii) has not been (A) held invalid or unenforceable by a court or other governmental agency of competent jurisdiction in a decision or order that is not subject to appeal, (B) canceled, or (C) abandoned.

2. TERM OF AGREEMENT. The term ("**Term**") of this Agreement shall be effective from the Effective Date and shall continue thereafter without expiration, unless terminated by Licensee pursuant to Section 8 below.

3. GRANT OF LICENSES.

3.1 Licensor Grants.

(a) Exclusive License. Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee an exclusive (even as to Licensor), limited, fully paid-up, royalty-free, worldwide, transferable, sublicensable, perpetual and irrevocable right and license ("**Exclusive License**") under and to the Licensed Patents and Licensed Technology only in the Exclusive Fields (i) to use (and have used), make (and have made), reproduce (and have reproduced) and Commercialize the Products in the Exclusive Fields and (ii) to develop and make Improvements to the Licensed Patents and Licensed Technology to use (and have used), make (and have made), reproduce (and have reproduced) and Commercialize the Products in the Exclusive Fields. Licensee confirms that Section 5.15 of the APA applies to this Exclusive License.

(b) Non-Exclusive Licenses.

(i) Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee a non-exclusive, limited, fully paid up, royalty-free, worldwide, transferable, sublicensable, perpetual and irrevocable right and license (the "**Non-Exclusive License**") under and to the Licensed Patents and Licensed Technology in the Non-Exclusive Fields to (A) use (and have used), make (and have made), reproduce (and have reproduced) and Commercialize the Products in the Non-Exclusive Fields and (B) to develop and make Improvements to the Licensed Patents and Licensed Technology to use (and have used), make (and have made), reproduce (and have reproduced) and Commercialize the Products in the Non-Exclusive Fields. Licensee confirms that Section 5.15 of the APA applies to this Non-Exclusive License.

(ii) Subject to the terms and conditions of this Agreement, Licensor hereby grants to Licensee a non-exclusive, fully paid up, royalty-free, worldwide, transferable, sublicensable, perpetual and irrevocable right and license to use and reproduce (A) any clinical data that would be relevant to the Products in either the Exclusive Fields or the Non-Exclusive Fields that is not included in the purchased Assets (as defined in the APA) and (B) any clinical data produced or received by Licensor relating to Licensor's ADAPT® platform technology that would be relevant to the Products.

(iii) Each time Licensor grants to any other party or parties a license or licenses to, or including, or covering the Non-Exclusive Fields and such license contains any term or terms more favorable than those contained in this Agreement and relating to or governing the Non-Exclusive License, then Licensor shall grant to Licensee the same more favorable terms granted to such third party for no additional consideration. Licensor shall promptly notify Licensee in writing of each license granted by Licensor that relates in any way to the Non-Exclusive Fields together with an unredacted copy of such license to enable Licensee to review the license and determine if any terms of such new license would require an amendment to the terms of this Agreement. Any amendments to the terms of this Agreement resulting from the application of this Section 3.1(b)(iii) shall be set forth in a written amendment executed by the Parties to this Agreement.

(c) Improvements. Licensee's right to make Improvements to the Licensed Patents and Licensed Technology is limited to those Improvements that are necessary or desirable to manufacture (or have manufactured) the Products in different sizes or shapes for use only in the Exclusive Fields or the Non-Exclusive Fields. Licensee is further prohibited from using the Licensed Patents and Licensed Technology in whole or in part, with respect to Licensee's XenoSure product line or any other competing product line to the Products.

(d) Regulatory Filings. Licensor hereby grants to Licensee the right of reference to all Regulatory Documentation to the extent not included in the Assets and pertaining to the Products submitted by or on behalf of Licensor their Affiliates and/or (sub)licensees for the purpose of seeking, obtaining and maintaining Regulatory Approval of any Product in the Territory. To the extent that a right of reference is not recognized by a Regulatory Authority, Licensor will make commercially reasonable efforts at Licensee's expense to further the Licensee's regulatory obligations with respect to such Regulatory Authority.

(e) Reservation of Rights. All worldwide rights of Licensor in and to the Licensed IP that are not expressly granted to Licensee by this Agreement are reserved to Licensor. No rights are granted under this Agreement by implication, estoppel or statute.

(f) Bankruptcy and Insolvency. All rights and licenses granted under or pursuant to any section of this Agreement, including the licenses granted under this Section 3.1 to the Licensed Patents and Licensed Technology, are and will otherwise be deemed to be for purposes of Section 365(n) of the Bankruptcy Code, licenses of rights to "intellectual property" as defined in Section 101(35A) of the Bankruptcy Code. Licensee will retain and may fully exercise all of its respective rights and elections under the Bankruptcy Code. The Parties agree that Licensee, as licensee of such rights under this Agreement, will retain and may fully exercise all of its rights and elections under the Bankruptcy Code or any other provisions of applicable Law outside the United States that provide similar protection for "intellectual property." The Parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against Licensor under the Bankruptcy Code or analogous provisions of applicable Law outside the United States, in addition to the rights granted to Licensee under Section 365(n), Licensee will be entitled to a complete duplicate of (or complete access to, as Licensee deems appropriate) such intellectual property and all embodiments of such intellectual property, which, if not already in Licensee's possession, will be promptly delivered to it upon Licensee's written request thereof. Any agreements supplemental hereto will be deemed to be "agreements supplementary to" this Agreement for purposes of Section 365(n)(4)(B) of the Bankruptcy Code.

3.2 Licensee Grants.

(a) Manufacturing License. Subject to the terms and conditions of this Agreement, for a period commencing on the date hereof and ending on the expiration or termination of the Transition Period (or such earlier date as elected by Licensee), Licensee hereby grants back to Licensor a non-exclusive, fully paid-up, royalty-free, limited, revocable, terminable, non-transferable, non-sublicensable right and license under and to the Licensed Patents and Licensed Technology in the Exclusive Fields solely for the purpose of manufacturing Products for and on behalf of Licensee under the TSA.

(b) Clinical Data License. Subject to the terms and conditions of this Agreement, Licensee hereby grants to Licensor a non-exclusive, fully paid up, royalty-free, limited, worldwide perpetual license to use and reproduce any clinical data generated by Licensee and pertaining to the Products.

4. SUBLICENSING

4.1 Sublicenses. Subject to the terms and conditions of this Agreement, Licensee may, only upon the prior written consent of Licensor (such consent not to be unreasonably withheld, delayed or conditioned), grant sublicenses of the licenses granted to Licensee in Section 3 above to third parties by entering into a written agreement with any such third party (each such agreement shall be referred to herein as a "**Sublicense**" and each such third party shall be referred to herein as a "**Sublicensee**").

5. PAYMENTS.

5.1 License Fee. In exchange for the licenses granted by Licensor to Licensee hereunder, Licensee shall pay to Licensor a one-time upfront payment of eight million U.S. Dollars (USD $8,000,000) (the "**License Fee**") on the Effective Date in immediately available funds to such account as designated in writing by Licensor. The License Fee is based upon the Exclusive Fields and the Non-Exclusive Fields and is not based on fields not granted to Licensee under this Agreement.

5.2 Taxes. All excise, sales, use, goods and services, transfer and all other taxes incurred in connection with the licenses granted by Licensor hereunder (the "**License Taxes**") shall be borne 50% by the Licensor, on the one hand, and 50% by Licensee, on the other; provided, however that the Licensor's liability for Transfer Taxes and License Taxes (as defined in the License Agreement) shall not exceed [***] in the aggregate.

6. ADDITIONAL AGREEMENTS

6.1 Rights of First Refusal.

(a) Carotid/Jugular Conduit Right of First Refusal. At any time during the Term, if Licensor (or any Licensor Affiliate) shall have received a bona-fide offer or proposal in writing (a "**Conduit Proposal**") from a third party (a **"Conduit Offeror**") to sell, license, convey, assign or otherwise transfer (a "**Conduit Transaction**") any rights to bovine carotid and jugular conduits processed with Licensor's ADAPT® platform technology for use as conduits in cardiac repair or replacement or vascular repair or replacement or any aspects of the foregoing (collectively the "**Conduit Technology**"), then Licensee will have a right of first refusal to acquire rights to such Conduit Technology in accordance with this Section 6.1(a). Upon receipt of a Conduit Proposal, Licensor shall provide a written notice of such Conduit Proposal (the "**Conduit Proposal Notice**") to Licensee no later than five (5) business days after receipt of such Conduit Proposal. The Conduit Proposal Notice shall include a true and correct copy, subject to appropriate redactions, of the Conduit Proposal, including all schedules, exhibits and ancillary documents related thereto, but shall not include any Confidential Information of the Conduit Offeror. Immediately after delivering the Conduit Proposal Notice to Licensee, Licensor shall provide Licensee access to, and, if requested, copies of, the information and other diligence materials, including all non-public information of Licensor, that are or have been supplied to the Conduit Offeror. Upon receipt of the Conduit Proposal Notice, Licensee shall have the irrevocable and exclusive option, at its sole discretion, to become, or to have any of its Affiliates become, the purchaser or licensee (as applicable) with respect to the Conduit Technology on substantially the same terms as provided in the Conduit Proposal. If Licensee elects to become, or to have any of its Affiliates become, the purchaser or licensee (as applicable) of the Conduit Technology, then Licensee shall deliver a written notice (the "**Licensee Conduit Proposal Notice**") to Licensor of such election within twenty (20) business days of its receipt of the Conduit Proposal Notice (the "**Conduit Consideration Period**"). Upon receipt by Licensor of Licensee Conduit Proposal Notice, Licensor shall not enter into or agree to the Conduit Proposal and shall enter into an agreement with Licensee or any of its affiliates (as designated by Licensee) on substantially the same terms as provided in the Conduit Proposal, and Licensor shall negotiate in good faith with Licensee in respect of such transaction. In the event Licensee does not deliver a Licensee Conduit Proposal Notice to Licensor before the expiration of the Conduit Consideration Period, then, and only then, Licensor shall be free, for a period of ninety (90) days following expiration of the Conduit Consideration Period (the "**Noticed Proposal Period**"), to enter into a definitive documentation with the Conduit Offeror on terms and conditions substantially the same as, and in any event not more favorable in any material respect to the Conduit Offeror than, the terms and conditions described in the Conduit Proposal. If, during a Noticed Proposal Period, any change or amendment to the Conduit Proposal is made that individually or in the aggregate with any other changes or amendments, are more favorable in any material respect to the Conduit Offeror, then such Conduit Proposal as changed or amended shall constitute a new Proposal subject anew to the terms and conditions of this Section 6.1(a). The right of first refusal granted by Licensor to the Licensee under this Section 6.1(a) shall not apply to any sale or change of control transaction of Licensor or Licensor Affiliate. Any consummation of a Conduit Transaction in violation of this Section 6.1(a) shall be void and ineffectual.

(b) Dura Right of First Refusal. At any time during the Term, if Licensor (or any Licensor Affiliate) shall have received a bona-fide offer or proposal in writing (a "**Dura Proposal**") from a third party ("**Dura Offeror**") to sell, license, convey, assign or otherwise transfer (a "**Dura Transaction**") any rights to patches for surgical dura repair or replacement processed with the ADAPT® platform technology or any aspects of the foregoing (collectively the "**Dura Technology**"), then Licensee will have a right of first refusal to acquire rights to such Dura Technology in accordance with this Section 6.1(b). Upon receipt of a Dura Proposal, Licensor shall provide a written notice of such Dura Proposal (the "**Dura Proposal Notice**") to Licensee no later than five (5) business days after receipt of such Dura Proposal. The Dura Proposal Notice shall include a true and correct copy of the Dura Proposal, subject to appropriate redactions, including all schedules, exhibits and ancillary documents related thereto, but shall not include any Confidential Information of the Dura Offeror. Immediately after delivering the Dura Proposal Notice to Licensee, Licensor shall provide Licensee access to, and, if requested, copies of, the information and other diligence materials, including all non-public information of Licensor, that are or have been supplied to the Dura Offeror. Upon receipt of the Dura Proposal Notice, Licensee shall have the irrevocable and exclusive option, at its sole discretion, to become, or to have any of its Affiliates become, the purchaser or licensee (as applicable) with respect to the Dura Technology on substantially the same terms as provided in the Dura Proposal. If Licensee elects to become, or to have any of its Affiliates become, the purchaser or licensee (as applicable) of the Dura Technology, then Licensee shall deliver a written notice (the "**Licensee Dura Proposal Notice**") to Licensor of such election within twenty (20) business days of its receipt of the Dura Proposal Notice (the "**Dura Consideration Period**"). Upon receipt by Licensor of Licensee Dura Proposal Notice, Licensor shall not enter into or agree to the Dura Proposal and shall enter into an agreement with Licensee or any of its Affiliates (as designated by Licensee) on substantially the same terms as provided in the Dura Proposal, and Licensor shall negotiate in good faith with Licensee in respect of such transaction. In the event Licensee does not deliver a Licensee Dura Proposal Notice to Licensor before the expiration of the Dura Consideration Period, then, and only then, Licensor shall be free, for a period of ninety (90) days following expiration of the Dura Consideration Period (the "**Dura Noticed Proposal Period**"), to enter into a definitive documentation with the Dura Offeror on terms and conditions substantially the same as, and in any event not more favorable in any material respect to the Dura Offeror than, the terms and conditions described in the Dura Proposal. If, during a Dura Noticed Proposal Period, any change or amendment to the Dura Proposal is made that individually or in the aggregate with any other changes or amendments, are more favorable in any material respect to theDura Offeror, then such Dura Proposal as changed or amended shall constitute a new Proposal subject anew to the terms and conditions of this Section 6.1(b). The right of first refusal granted by Licensor to the Licensee under this Section 6.1(a) shall not apply to any sale or change of control transaction of Licensor or Licensor Affiliate. Any consummation of a Dura Transaction in violation of this Section 6.1(b) shall be void and ineffectual.

6.2 Exclusivity.

(a) From and after the Effective Date, Licensor and its Affiliates are prohibited from directly or indirectly selling, assigning, conveying, licensing or otherwise transferring any rights in or to the Licensed Patents and the Licensed Technology in the Exclusive Fields. Licensor acknowledges and agrees that a breach of these restrictions by Licensor or any Affiliate of Licensor would cause irreparable harm to Licensee and that Licensee shall be entitled to obtain injunctive relief in the event of a breach of this Section 6.2 by Licensor or an Affiliate of Licensor.

6.3 **Technology Transfer**. Licensor undertakes at no charge to Licensee to reasonably cooperate throughout the term of the Transition Services Agreement with Licensee in order to facilitate the transfer of the Licensed Technology and related know-how concerning Product manufacturing to Licensee ("**Technology Transfer**"). In furtherance of these objectives, Licensor and Licensee agree that Licensor shall provide at no charge to Licensee (other than expressly provided below) the Technology Transfer services including, but not limited to the following:

(a) upon reasonable notice from Licensee, Licensor shall allow three of Licensee's employees reasonable access to Licensor's manufacturing facility for the purpose of training in the manufacturing processes for the Products for up to 185 days each on a schedule mutually agreed upon (provided that, notwithstanding anything contained herein to the contrary, Licensee shall pay for the associated travel costs and accommodations of its employees). This shall include, but not be limited to, (i) allowing Licensee's employees to observe and videotape the manufacture of Products in Licensor's facility, (ii) instruction on the manufacturing processes for the Products, including how to use the manufacturing equipment, (iii) manufacturing and assembly training, and (iv) training on preventative maintenance on and troubleshooting the manufacturing equipment, how to inspect the Products, and how to address common defects and the disposition thereof;

(b) upon reasonable request of Licensee, Licensor shall provide Licensee at Licensee's manufacturing facility: (i) a manufacturing engineer (or such other qualified Licensor employee acceptable to Licensee) to assist Licensee for up to ten (10) business days in assembling manufacturing equipment and implementing manufacturing processes for the Products, and (ii) a processing technician to assist Licensee for up to ten (10) business days in training Licensee's employees in such manufacturing processes (provided that, notwithstanding anything contained herein to the contrary, Licensor shall pay for the associated travel costs and accommodations of its employees);

(c) upon reasonable request of Licensee, provide ten (10) additional business days of consulting services related to the manufacturing of the Products at Licensee's facilities (provided that, notwithstanding anything contained herein to the contrary, Licensor shall pay for the associated travel costs and accommodations of its employees); and

(d) provide Licensee with all such other technical support (but not in-person) as is reasonably necessary in order for Licensee to manufacture the Products during the Transition Period.

6.4 **Regulatory Cooperation**. Licensor will work collaboratively with Licensee, at Licensee's expense and upon the request of Licensee, to provide reasonable support to Licensee in connection with regulatory filings required to obtain and maintain Regulatory Approval in the Territory and to Commercialize the Products. Licensor shall promptly provide Licensee with any copies of documents in its possession required for all government approvals, registrations and/or recordals required or advisable under any applicable laws in the Territory to enable Licensee to exercise, enforce and enjoy all of the rights and obligations contained thereunder. Neither Party, or its respective Affiliates, will willfully engage in any activity that adversely impacts the Regulatory Approval of the Product in the Territory. Either Party shall have the right to bring any matter to the attention of the other Party that the Party reasonably believes could adversely affect the Regulatory Approval of the Product in the Territory and the Parties shall discuss in good faith the resolution of such concern.

6.5 **Right to Audit by Licensor**. During the term of this Agreement, upon fifteen (15) business days' written notice and not more than once per year, Licensor or representatives of Licensor shall have the right to inspect Licensee's use of the Licensed IP for no more than three (3) consecutive Business Days, under the terms and conditions of this Agreement. The scope of such audit and inspection may include the review of all records of Licensee regarding use of the Licensed IP in conjunction with its obligations under this Agreement, as well as processes and related process internal controls and support systems, the quality and accuracy of which are directly related to the performance of Licensee's obligations under this Agreement. Licensee agrees to provide Licensor and Licensor's representatives reasonable access to books, records, systems and processes relating to the use of the Licensed IP, and shall cooperate fully with Licensor in support of their inspection and audit activities during Licensee's normal business hours. Licensor and/or Licensor's representatives shall execute such confidentiality agreements reasonably requested by Licensee, and consistent with the confidentiality obligations set forth in this Agreement. Licensor shall bear all out-of-pocket expenses associated with each such audit.

7. INTELLECTUAL PROPERTY

7.1 Ownership; Disclosure.

(a) Ownership. Licensee hereby acknowledges, agrees and confirms that, as between the Parties, Licensor is and will remain the sole and exclusive owner of the Licensed IP. Any Improvements, as allowed under Section 3.1, that are conceived, invented and reduced to practice solely by, or on behalf of, Licensee ("**Licensee Improvements**") shall be owned by Licensee. Any Improvements to the manufacture of the Products that are conceived, invented and reduced to practice during the Transition Period solely by, or on behalf of, Licensor for the sole benefit of Licensee's manufacture of the Products ("**Licensor Improvements**") shall be owned by Licensor and included in the licenses granted hereunder in accordance with Section 3.1 above. For purposes of determining whether an Improvement is a Licensee Improvement or a Licensor Improvement, questions of inventorship shall be resolved in accordance with the applicable patent Laws in the United States. Each of Licensor and Licensee warrants to the other Party that it will not take, or omit to take, any action that would interfere with such other Party's sole and exclusive ownership of such Party's intellectual property.

(b) Disclosure of Improvements. Licensee shall promptly disclose in writing to Licensor in a timely manner any Licensee Improvement ("**Licensee Invention Notice**"). Licensor shall promptly disclose in writing to Licensee in a timely manner any Licensor Improvement ("**Licensor Invention Notice**"). Such disclosures by Licensee and Licensor shall include a reasonably detailed written description of the Licensee Improvement or Licensor Improvement (as the case may be). All information disclosed by one Party to the other Party relating to such Licensee Improvements or Licensor Improvements shall be treated as Confidential Information.

7.2 Prosecution and Maintenance of Licensed Patents.

(a) Prosecution of Licensed Patents. Licensor will control the preparation and prosecution of any patent applications pertaining to Licensed Patents. With respect to Licensed Patents, Licensor and Licensee shall cooperate in connection with the continued prosecution and maintenance by Licensor of such Licensed Patents. The out-of-pocket costs and expenses incurred to obtain, prosecute and maintain Licensed Patents shall be borne by Licensor.

(b) Abandoned Patents. Licensor shall not abandon any Licensed Patent in the Territory (the "**Abandoned Patents**") without at least sixty (60) days' prior notice to Licensee. If Licensor decides to abandon any Licensed Patent in the Territory, upon Licensee's election and request, Licensee shall, at its sole expense, have the option to continue to prosecute and maintain the Abandoned Patents in Licensor's name by providing a written notice to Licensor. In such event, Licensor shall promptly provide Licensee with the appropriate documents to continue to prosecute or maintain the Abandoned Patents in Licensor's name. For avoidance of doubt, Abandoned Patents owned by Licensor, but prosecuted and maintained by Licensee shall continue to be a Licensed Patent.

7.3 Infringement Claims by Third Parties. If the manufacture, or Commercialization of any Product in any country or countries of the Territory pursuant to this Agreement using the Licensed IP under Section 3.1 results in a claim, suit or proceeding by a third party alleging patent infringement against Licensor or Licensee (or their respective Affiliates, Sublicensees or Distributors, as applicable) (each, an"**Infringement Action**"), or in Licensor's or Licensee's opinion, is likely to become the subject of an Infringement Action, such Party shall promptly notify the other Party hereto in writing of the existence of such Infringement Action or of its concern that such an action is imminent. Licensor shall defend and control the defense of any such Infringement Action at its own expense, using counsel reasonably experienced in the defense of patent infringement claims (except in the case of an Infringement Action based on Licensee Improvement, in which case Licensee shall defend and control the defense of any such Infringement Action at its own expense, using counsel reasonably experienced in the defense of patent infringement claims). Licensee may participate in any such claim, suit, or proceeding with counsel of its choice at its own expense. Without limitation of the foregoing, if Licensor finds it necessary or desirable to join Licensee as a party to any such action, Licensee shall execute all papers and perform such acts as shall be reasonably required at Licensor's expense. If Licensor fails to initiate and maintain the defense of any such Infringement Action within ten (10) days of notice of such action, Licensee may conduct and control the defense of any such claim, suit, or proceeding and Licensor shall indemnify Licensee in full for the expense of such defense (except in the case of an Infringement Action based on Licensee Improvement, in which case Licensee shall defend and control the defense of any such Infringement Action at its own expense, using counsel reasonably experienced in the defense of patent infringement claims). Each Party shall keep the other Party reasonably informed of all material developments in connection with any such Infringement Action. Any recoveries of any sanctions awarded to Licensee or Licensor (as applicable) and against a party asserting a claim being defended under this Section 7.3 shall be applied as follows: such recovery shall be applied first to reimbursing the defending Party for its reasonable out-of-pocket costs of defending such claim, suit, or proceedings (including reasonable attorneys' fees, court costs and expenses), with the balance divided so that 50% is remitted to Licensor and 50% to Licensee.

7.4 Invalidity or Unenforceability Defenses or Actions. Each Party shall promptly notify the other Party in writing of any alleged or threatened assertion of invalidity or unenforceability of any of the Licensed Patents, by a third party, in each case in the Territory and of which such Party becomes aware. Licensor shall defend and control the defense of the validity and enforceability of the Licensed Patents at its own expense, using counsel reasonably satisfactory to Licensee. Licensee may participate in any such claim, suit, or proceeding with counsel of its choice at its own expense. If Licensor fails to initiate and maintain the defense of any such claim, suit, or proceeding, then Licensee may conduct and control the defense of any such claim, suit, or proceeding, and Licensor shall indemnify Licensee in full for the expense of such defense.

7.5 Settlements. Notwithstanding anything in this Agreement to the contrary, neither Party may, without the advance written consent of the other Party (such consent not to be unreasonably withheld, conditioned or delayed), settle, compromise, or otherwise enter into any form of settlement (or other similar agreement) regarding any claim or action brought under Section 7.3 or Section 7.4 that either (i) admits liability on the part of the other Party; (ii) negatively affects the rights of Licensor or Licensee or imposes any liability, restrictions, or obligation upon Licensor or Licensee; (iii) requires any financial payment by Licensor or Licensee; and/or (iv) grants rights or concessions to a third party to the Licensed IP, any Products or the Exclusive Fields.

7.6 Cooperation. Each Party shall assist and cooperate with the other Party as such other Party may reasonably request from time to time in connection with its activities set forth in this Section 7, including by being joined as a party plaintiff in any action or proceeding involving the rights granted hereunder, providing access to relevant documents and other evidence, and making its employees available at reasonable business hours. In connection with any such defense or claim or counterclaim, the controlling Party shall consider in good faith any comments from the other Party and shall keep the other Party reasonably informed of any steps taken, and shall provide copies of all documents filed, in connection with such defense, claim, or counterclaim. In connection with the activities set forth in this Section 7, each Party shall consult with the other as to the strategy for the defense of the Licensed Patents.

8. DEFAULT, REMEDIES, TERMINATION

8.1 Non-Terminable by Licensor. Licensor acknowledges and agrees that the licenses granted hereunder are irrevocable, fully paid up, perpetual and non-terminable by Licensor, and accordingly that Licensor has no right to terminate this Agreement.

8.2 Termination for Convenience. Licensee may at any time terminate this Agreement in its entirety for any reason or no reason upon ninety (90) days prior written notice to Licensor.

8.3 Termination for Insolvency. This Agreement may be terminated by Licensee upon written notice to Licensor (i) if Licensor shall make an assignment for the benefit of its creditors, file a petition in bankruptcy, petition or apply to any tribunal for the appointment of a custodian, receiver or trustee for it or a substantial part of its assets, or shall commence any proceeding under any bankruptcy, reorganization, readjustment of debt, dissolution or liquidation law or statute of any jurisdiction, whether now or hereafter in effect; or (ii) if there shall have been filed against Licensor any such *bona fide* petition or application, or any such proceeding shall have been commenced against it, in which an order for relief is entered or that remains undismissed or unstayed for a period of ninety (90) days or more; or (iii) if Licensor by any act or omission shall indicate its consent to, approval of or acquiescence in any such petition, application or proceeding or order for relief or the appointment of a custodian, receiver or trustee for it or any substantial part of its assets, or shall suffer any such custodianship, receivership or trusteeship to continue undischarged or unstayed for a period of ninety (90) days or more; or (iv) anything analogous to any of the foregoing occurs in any applicable jurisdiction. Termination pursuant to this Section 8.3 shall be effective upon the date specified in such notice.

8.4 Effect of Termination. If this Agreement is terminated by Licensee under Section 8, then the licenses granted to Licensee in Section 3 shall terminate. Termination of this Agreement for any reason shall not release either Party from any liability that, at the time of such termination, has already accrued or that is attributable to a period prior to such termination nor preclude either Party from pursuing any right or remedy it may have hereunder or at Law or in equity with respect to any breach of this Agreement. Sections 3.1(d), 3.2(b), 6.1, 6.4, 7.3, 9, 10, 11, and 12 survive termination of this Agreement.

9. WARRANTIES

9.1 Mutual Representations and Warranties. Each Licensor represents to Licensee, and Licensee represents to Licensor the following:

(a) Good Standing. Such Party is a corporation duly organized, validly existing and in good standing under the laws of the jurisdiction of its formation, and has all necessary corporate powers to own, use and transfer its properties and assets, and to carry on its business as now owned and operated.

(b) No Conflicts. The entering into by such Party of this Agreement and the performance and consummation by such Party of the matters contemplated hereby, does not and shall not violate any agreement with or obligation to (whether express, implied or by operation of law) or right of (including intellectual property rights) of any other person, company or entity to which such Party is a party or subject, and, that this Agreement is binding upon such Party pursuant to the laws of such Party's domicile.

(c) Authorization. Such Party has the corporate power and authority to execute and deliver this Agreement and to perform its obligations hereunder. The execution, delivery and performance of this Agreement has been duly and validly authorized and approved by all necessary corporate action on the part of each such Party. Assuming due authorization, execution and delivery on the part of each Party, this Agreement constitutes a legal, valid and binding obligation of each such Party, enforceable against such Party in accordance with its terms.

9.2 Representations and Warranties of Licensor. Each Licensor represents and warrants to Licensee the following:

(a) All Licensed Patents existing as of the Effective Date are listed on Schedule 1. All issued Licensed Patents are in full force and effect. The Licensed Patents that consist of patent applications as listed are being prosecuted in the respective patent offices in the Territory in accordance with applicable Law. All Licensed Patents, have been filed and maintained properly and correctly and all applicable fees have been paid on or before the due date for payment.

(b) The Licensed IP includes all intellectual property rights owned or controlled by Licensor necessary, for the development (as permitted hereunder), manufacture and Commercialization of the Products.

(c) There are no claims that have been filed and served against Licensor or any Licensor Affiliate, judgments, or settlements against, or amounts with respect thereto, owed by Licensor or any Licensor Affiliate relating to the Regulatory Documentation, Licensed Patents, or the Licensed Technology. No claim or litigation has been filed and served against Licensor or any Licensor Affiliate or threatened in writing by any person alleging, and Licensor has no knowledge that the Licensed Patents are invalid or unenforceable. Neither Licensor nor any Licensor Affiliate has received any written notice from any third party claiming that the development, manufacture or Commercialization of the Products do or will, violate, infringe or misappropriate any intellectual property right of such third party. To Licensor's knowledge, no person is infringing or threatening to infringe the Licensed Patents or misappropriating or threatening to misappropriate the Licensed Patents, any Licensed Technology or the Regulatory Documentation.

(d) Licensor is the sole and exclusive owner of the entire right, title and interest in the Licensed Patents and the Licensed Technology and free of any encumbrance, lien, or claim of ownership by any third party. Licensor is entitled to grant the licenses specified herein.

(e) Neither Licensor nor any of its Affiliates shall encumber or diminish, the rights granted to Licensee hereunder with respect to the Licensed IP.

(f) Licensor has used commercially reasonable efforts to keep the Licensor Technology confidential and to Licensor's knowledge, has only disclosed the Licensor Technology to third parties under terms of confidentiality. To the knowledge of Licensor and its Affiliates no breach of such confidentiality has been committed by any third party.

(g) The inventions claimed or covered by the Licensed Patents were not conceived, discovered, developed, or otherwise made in connection with any research activities funded, in whole or in part, by the federal government of the United States or any agency thereof.

(h) Compliance. Licensor is in compliance with and is not in default under or in violation of, and has not received any written notices of non-compliance, default or violation with, in each case, in any material respect, with respect to any Laws relevant to the Licensed IP.

10. INDEMNIFICATION.

10.1 Indemnification by Licensee. Licensee agrees to defend, indemnify and hold Licensor and its respective Affiliates, officers, directors, employees, agents, successors and assigns harmless from and against any and all claims, demands, actions, causes of action, judgments, losses, damages, costs and expenses (including, but not limited to, attorneys' and expert witness fees and expenses) (collectively "**Losses**") arising out of, relating to or resulting from:

(a) any misrepresentation or breach of any representation, warranty, covenant or agreement made by Licensee in this Agreement;

(b) the gross negligence or willful misconduct of Licensee in connection with Licensee's performance of this Agreement; and

(c) the manufacture or commercialization of the Products by Licensee, its Affiliates, or sublicensees during the term of this Agreement (but excluding the manufacture of the Products by the Licensor under the TSA during the term of this Agreement).

10.2 **Indemnification by Licensor**. Licensor agrees to defend, indemnify and hold Licensee and its respective Affiliates, officers, directors, employees, agents, successors and assigns harmless from and against any and all Losses arising out of or relating to or resulting from:

(a) any misrepresentation or breach of any representation, warranty, covenant or agreement made by Licensor in this Agreement;

(b) the gross negligence or willful misconduct of Licensor in connection with Licensor's performance of this Agreement;

(c) the development, manufacture or commercialization of the Products by Licensor, its Affiliates, or sublicensees prior to the Effective Date of this Agreement; or

(d) the development, manufacture or commercialization of any other products by Licensor, its Affiliates, or sublicensees whether before or after the Effective Date of this Agreement.

10.3 **General Indemnification Procedures**.

(a) In the event that any Legal Proceeding shall be threatened or instituted in respect to which indemnification may be sought by one party hereto from another party under the provisions of this Section 10, the party seeking indemnification ("**Indemnitee**") shall, reasonably promptly after acquiring actual knowledge of such threatened or instituted Legal Proceeding, cause written notice in reasonable detail of such threatened or instituted Legal Proceeding covered by this indemnification, to be forwarded to the other party from which indemnification is being sought ("**Indemnitor**"); provided, however, that the failure to provide such notice as of any particular date as aforesaid will not affect any rights to indemnification hereunder, except to the extent, and only to such extent, that such failure to provide such notice actually and materially prejudices the Indemnitor's ability to adequately defend such Legal Proceeding or actually and materially increases the amount of a party's Losses as applicable. In the case of any Losses not involving a Legal Proceeding, the Indemnitee shall, reasonably promptly after acquiring actual knowledge of such Losses, cause written notice in reasonable detail of such Losses covered by this indemnification, to be forwarded to the Indemnitor; provided, however, that the failure to provide such notice as of any particular date as aforesaid will not affect any rights to indemnification hereunder, except to the extent that failure to provide notice actually and materially increases the amount of a party's Losses as applicable.

(b) In the event of the initiation of any Legal Proceeding against an Indemnitee by a third party, the Indemnitor shall have the right after the receipt of the notice described in Section 10.3(a), at its expense, to appoint counsel to represent Indemnitee, which shall be reasonably satisfactory to the Indemnitee, and (subject to Section 10.3(c)) to defend against, negotiate, settle or otherwise deal with any Legal Proceeding or demand that relates to any Licensor Losses or Licensee Losses, as the case may be, indemnified against hereunder, and, in such event, the Indemnitee will reasonably cooperate with the Indemnitor and its representatives in connection with such defense, negotiation, settlement or dealings (and the Indemnitee's costs and expenses arising therefrom or relating thereto shall constitute Licensor's Losses, if the Indemnitee is the Licensor, or Licensee's Losses, if the Indemnitee is the Licensee); provided, however, that the Indemnitor shall actively and diligently defend the Indemnitee; and provided further that the Indemnitee may directly participate in any such Legal Proceeding so defended with counsel of its choice at its own expense, subject to the Indemnitor's right to control the defense for which it bears the expense. If the Indemnitor fails to take reasonable steps necessary to defend diligently such third party claim within 10 Business Days after receiving written notice from the Indemnitee that the Indemnitee reasonably believes the Indemnitor has failed to take such steps or if the Indemnitor has not undertaken fully to indemnify the Indemnitee in respect of all such Licensor's or Licensee's Losses, as the case may be, relating to the matter and as required hereunder, the Indemnitee may assume its own defense, and, in such event (i) seek indemnification for all Licensor's or Licensee's Losses, as the case may be, reasonably paid or incurred in connection therewith, and (ii) the Indemnitor shall, in any case, reasonably cooperate, at its own expense, with the Indemnitee and its representatives in connection with such defense.

(c) Without the prior written consent of the Indemnitee, which shall not be unreasonably withheld, the Indemnitor will not enter into any settlement of any third-party claim that would lead to liability or create any financial or other obligation on the part of the Indemnitee for which the Indemnitee is not entitled to indemnification hereunder or which would otherwise adversely affect the licenses granted to Licensee under this Agreement.

(d) An Indemnitee shall use commercially reasonable efforts to pursue and collect any amounts payable under insurance policies on account of Licensor's Losses (if the Indemnitee is the Licensor) or Licensee's Losses (if the Indemnitee is the Licensee), but only if doing so will not result in (i) an increase in premiums due then or in the future to procure comparable insurance or an increase in deductibles; or (ii) a decrease in the levels of insurance or a change in the risks insured against; or (iii) prejudice to the Indemnitee's claims or rights to indemnification hereunder.

(e) After any final judgment or award shall have been rendered by a Governmental Authority of competent jurisdiction, or a settlement shall have been consummated, or the Indemnitee and the Indemnitor shall have arrived at a mutual agreement with respect to each separate matter alleged to be indemnified by the Indemnitor hereunder, the Indemnitee shall forward to the Indemnitor notice of any sums due and owing by it with respect to such matter, and the Indemnitor shall pay all of the sums so owing to the Indemnitee by wire transfer or certified or bank cashier's check within 10 Business Days after the date of such notice. Any and all Licensor's Losses or Licensee's Losses, other than those described in the preceding sentence (including Licensor's Losses or Licensee's Losses incurred in the absence of any threatened or pending Legal Proceeding, or Licensor's Losses or Licensee's Losses incurred after any such Legal Proceeding has been threatened or instituted but prior to the rendering of any final judgment or award in connection therewith), shall be paid by the Indemnitor on a current basis, and, without limiting the generality of the foregoing, the Indemnitee shall have the right to invoice the Indemnitor for such Licensor's Losses or Licensee's Losses, as the case may be, as frequently as it deems appropriate, and the amount of any such Licensor's Losses or Licensee's Losses, as the case may be, which are described or listed in any such invoice shall be paid to the Indemnitee, by wire transfer or certified or bank cashier's check, within 10 Business Days after the date of such invoice. Notwithstanding the foregoing, the Licensee's claims for indemnification pursuant to this Section 10 may be satisfied, in Licensee's sole discretion, from any amounts that may then be owing from the Licensee to the Licensor under the APA.

11. CONFIDENTIALITY

11.1 **Definition of Confidential Information**. The Parties acknowledge that, prior to and during the Term of this Agreement, the Parties may disclose to one another scientific, technical, trade secret, business, or other information which is treated by the disclosing Party as confidential or proprietary, including but not limited to unpublished patent applications and technical information ("**Confidential Information**"). The Parties agree that in order to ensure that each Party understands which information is deemed to be confidential, all Confidential Information will be in written form and clearly marked as "Confidential," and if the Confidential Information is initially disclosed in oral or some other non-written form, it will be confirmed and summarized in writing and clearly marked as "Confidential" within thirty (30) days of disclosure. The receiving Party shall hold such Confidential Information in confidence and shall treat such information in the same manner as it treats its own confidential information but not less than with a reasonable degree of care. The Confidential Information provided to the receiving Party will remain the property of the disclosing Party, and will be disclosed only to those persons necessary for the performance of this Agreement. Any Licensed Technology identified as provided above shall be deemed Confidential Information.

11.2 **Exclusions**. Confidential Information does not include information that (a) is or becomes part of the public domain through no act by or on behalf of the receiving Party; (b) is lawfully received by the receiving Party from a third party without any restrictions, and/or (c) comprises identical subject matter to that which had been originally and independently developed by the receiving Party personnel without knowledge or use of any Confidential Information as evidenced by the receiving Party's records.

11.3 **General Obligations**. The receiving Party agrees that during the Term and thereafter it will (a) refrain from disclosing any Confidential Information to third parties (other than to any government authority as required for Regulatory Approval), (b) disclose Confidential Information to only those employees of the receiving Party necessary for the receiving Party to use the Confidential Information in accordance with this Agreement and who are subject to restrictions on use and disclosure at least as restrictive as those set forth in this Agreement, (c) keep confidential the Confidential Information, and (d) except for use in accordance with the licenses which are expressly granted in this Agreement, refrain from using Confidential Information. Each party acknowledges and agrees that a breach of these terms by the other party or its affiliates with respect to the Confidential Information, including but not limited to Licensor's trade secrets included in the Licensed Technology, would cause irreparable harm to the other party and that the disclosing party shall be entitled to seek injunctive relief in the event of a breach of this Section 11 by the other party or its affiliates.

11.4 **Licensee Disclosure Rights**. Notwithstanding Section 11.3, nothing herein shall limit or restrict Licensee's ability to use Licensor's Confidential Information and make such disclosures to Governmental Authorities and other third parties as necessary to exercise in full, Licensee's rights and licenses granted under this Agreement and to engage in the use of the Licensed IP in accordance with this Agreement and in the manufacture and Commercialization of the Products. Such disclosure rights include, but are not limited to disclosure necessary or appropriate to obtain or maintain any Regulatory Approval for the Products, conducting testing and enforcing rights in and to the Licensed IP.

11.5 Judicial Procedures. The receiving Party may, to the extent necessary, disclose the disclosing Party's Confidential Information in accordance with a judicial or other governmental order, provided that the receiving Party either (a) gives the disclosing Party reasonable notice prior to such disclosure to allow the disclosing Party a reasonable opportunity to seek a protective order or equivalent, or (b) obtains written assurance from the applicable judicial or governmental entity that it will afford the Confidential Information the highest level of protection afforded under applicable law or regulation.

12. MISCELLANEOUS

12.1 Entire Agreement. This Agreement together with the Schedules hereto and the Closing Documents (as defined in the APA) (a) supersedes any other prior or contemporaneous agreement, understanding, promise, representation or express or implied commitment or obligation, whether written or oral, that may have been made or entered into by any party or any of their respective Affiliates (or by any director, officer or representative thereof) with respect to the subject matter hereof and (b) constitutes the entire agreement of the Parties hereto with respect to the matters provided for herein. Any other agreements, promises, representations, or assurances made by either party to this Agreement or entered into by the Parties hereto on or before the date of this Agreement, whether oral or written, relating to the subject matter of this Agreement are of no force or effect. No investigation or receipt of information by or on behalf of Licensee will diminish or obviate any of the representations, warranties, covenants or agreements of Licensor under this Agreement or the conditions to obligations of Licensor under this Agreement.

12.2 Amendments. No amendment, modification or alteration of the terms or provisions of this Agreement shall be binding unless the same shall be in writing and duly executed by each of the Parties hereto.

12.3 Successors and Assigns. This Agreement shall inure to the benefit of and be binding upon the Parties hereto, and their respective successors and permitted assigns. Subject to the terms and conditions of this Agreement, his Agreement is freely assignable by either Party upon notice to the other Party. For purposes of this Section 12.3, the term "assignment" shall include the consolidation or merger of a party with and into a third party or the sale of all or substantially all of the assets or business of a party. Any attempted assignment in violation of this Section 12.3 shall be null and void.

12.4 Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original for all purposes and all of which together shall constitute one and the same instrument.

12.5 Headings and Section References. The headings of the sections and paragraphs of this Agreement are included for convenience only and are not intended to be a part of, or to affect the meaning or interpretation of, this Agreement. All section references herein, unless otherwise clearly indicated, are to sections within this Agreement.

12.6 Waiver. No failure or delay by any Licensor or Licensee in exercising any right, power or privilege hereunder shall operate as a waiver thereof; nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided are cumulative and not exclusive of any rights or remedies otherwise provided by law.

12.7 **Expenses**. Licensor and Licensee shall each pay all of their own respective costs and expenses incurred in connection with the negotiation of this Agreement.

12.8 **Notices**. Any notice, request, instruction or other document to be given under this Agreement by any party hereto to any other party shall be in writing and delivered by email and delivered personally, dispatched by facsimile transmission or sent by a nationally recognized overnight courier service or by registered or certified mail, postage prepaid:

If to Parent, ARPL or ABPL, at the following address:

Toowong Tower Level 3,
9 Sherwood Rd
Toowong QLD 4066 Australia
Attn: General Counsel
Email: generalcounsel@admedus.com

If to the Licensee, at the following address:

63 Second Avenue
Burlington, Massachusetts 01803
Attn.: Legal Department
Facsimile: 781-425-5049
Email: legal@lemaitre.com

or at such other address for a party or as shall be specified by like notice. Any notice that is delivered personally in the manner provided herein shall be deemed to have been duly given to the person or entity to which it is directed upon actual receipt by such party (or its agent for notices hereunder). Any notice by facsimile transmission shall be deemed to have been duly given to the person or entity to which it is addressed upon transmission and confirmation of receipt. Any notice that is addressed as provided herein and mailed by registered or certified mail shall be conclusively presumed to have been duly given to the person or entity to which it is addressed at the close of business, local time of such party, on the third calendar day after the day it is so placed in the mail. Any notice that is addressed as provided herein and sent by a nationally recognized overnight courier service shall be conclusively presumed to have been duly given to the person or entity to which it is addressed at the close of business, local time of such person or entity, on the next Business Day following its deposit with such courier service for next day delivery.

12.9 **Governing Law**. This Agreement and the legal relations among the parties hereto shall be governed and construed in accordance with the substantive Laws of the State of Delaware, without giving effect to the principles of conflict of laws thereof.

12.10 **Severability**. If any provisions hereof shall be held by any court of competent jurisdiction to be illegal, void or unenforceable, such provisions shall be of no force and effect, but the illegality or unenforceability shall have no effect upon, and shall not impair the enforceability of, any other provision of this Agreement.

12.11 **Rights of Third Parties**. Nothing expressed or implied in this Agreement is intended or will be construed to confer upon or give any person or entity other than the parties hereto and their respective successors and permitted assigns any rights or remedies under or by reason of this Agreement or any transaction contemplated hereby.

12.12 **Group Liability**. Each of Parent, ARPL and ABPL is and shall be jointly and severally liable for the covenants, conditions, provisions and agreements of this Agreement to be kept, observed and performed by such Parties; and the act or signature of, or notice from or to, any one or more of them with respect to this Agreement shall be binding upon each and all of the other Licensor Parties with the same force and effect as if each and all of them had so acted or signed, or given or received such notice.

12.13 **Consent to Jurisdiction**. Each Party agrees that, in the event such party elects to initiate litigation against the other party, such party shall, and may only, file such litigation in the state or federal courts of Delaware. Each party hereby expressly and irrevocably waives any claim or defense in any action or proceeding brought in said jurisdiction and courts based on any alleged lack of personal jurisdiction, improper venue, forum non conveniens or any similar basis.

12.14 **Press Release; Other Announcements**. The parties shall consult with each other before issuing any press release or otherwise making any public statements with respect to this Agreement or the transactions contemplated hereby, and no party shall issue any press release or make any public statement prior to obtaining the other party's prior approval, which approval shall not be unreasonably withheld. No such approval shall be necessary to the extent disclosure may be required by applicable Law or the rules of any stock exchange. The Seller Group acknowledges that the Purchaser may be required to file this Agreement and one or more of the Closing Documents with the United States Securities and Exchange Commission.

12.15 **Interpretive Matters**. No provision of this Agreement will be interpreted in favor of, or against, any of the parties hereto by reason of the extent to which any such party or its counsel participated in the drafting thereof or by reason of the extent to which any such provision is inconsistent with any prior draft hereof or thereof.

Signature Page Follows

IN WITNESS WHEREOF, the Parties have caused this Agreement to be executed as of the date and year first above written.

LICENSOR:

ADMEDUS REGEN PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS BIOMANUFACTURING PTY LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

ADMEDUS LTD

By: /s/ Wayne Paterson
Name: Wayne Paterson
Title: Chief Executive Officer

LICENSEE:

LEMAITRE VASCULAR, INC.

By: /s/ David B. Roberts
Name: David B. Roberts
Title: President

The schedule to this Agreement listed below has been omitted pursuant to Item 601(a)(5) of Regulation S-K. A copy of this schedule will be provided to the Securities and Exchange Commission upon request.

Schedule 1 – Patents

EXHIBIT 21.1

SUBSIDIARIES OF THE REGISTRANT

The following is a list of our subsidiaries:

Name	State or Other Jurisdiction of Incorporation	Name Under Which Does Business
LeMaitre Vascular GmbH	Germany	Same
LeMaitre Vascular GK	Japan	Same
LeMaitre Acquisition LLC	Delaware	Same
LeMaitre Vascular SAS	France	Same
LeMaitre Vascular Spain, S.L.	Spain	Same
LeMaitre Vascular S.r.l.	Italy	Same
Vascutech Acquisition LLC	Delaware	Same
LeMaitre Vascular ULC	Canada	Same
LeMaitre Vascular Switzerland GmbH	Switzerland	Same
LeMaitre Vascular AS	Norway	Same
LeMaitre Vascular Pty Ltd	Australia	Same
LeMaitre Medical Technology (Shanghai) Co., Ltd.	China	Same
LeMaitre Vascular, Ltd	United Kingdom	Same
Bio Nova Holdings Pty Ltd	Australia	Same
Bio Nova International Pty Ltd	Australia	Same
LeMaitre Cardial SAS	France	Same
LeMaitre Vascular Singapore Pte Ltd	Singapore	Same

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated March 11, 2020, with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of LeMaitre Vascular, Inc. on Form 10-K for the year ended December 31, 2019. We consent to the incorporation by reference of said reports in the Registration Statements of LeMaitre Vascular, Inc. on Form S-3 (File No. 333-195658) and Forms S-8 (File No. 333-138181, File No. 333-161361, File No. 333-174129, and File No. 333-205360).

/s/ GRANT THORNTON LLP

Boston, Massachusetts
March 11, 2020

EXHIBIT 31.1

CERTIFICATIONS

I, George W. LeMaitre, certify that:

1. I have reviewed this Annual Report on Form 10-K of LeMaitre Vascular, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ GEORGE W. LEMAITRE

George W. LeMaitre
Chairman and Chief Executive Officer

Date: March 11, 2020

EXHIBIT 31.2

CERTIFICATIONS

I, Joseph P. Pellegrino, Jr., certify that:

1. I have reviewed this Annual Report on Form 10-K of LeMaitre Vascular, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ JOSEPH P. PELLEGRINO, JR.

Joseph P. Pellegrino, Jr.
Chief Financial Officer

Date: March 11, 2020

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of LeMaitre Vascular, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Joseph P. Pellegrino, Jr., Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being provided pursuant to 18 U.S.C. § 1350 and is not deemed to be a part of the Report, nor is it to deemed to be "filed" for any purpose whatsoever.

/s/ GEORGE W. LEMAITRE

George W. LeMaitre
Chairman and Chief Executive Officer

March 11, 2020

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of LeMaitre Vascular, Inc. (the "Company") on Form 10-K for the period ended December 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Joseph P. Pellegrino, Jr., Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

This certification is being provided pursuant to 18 U.S.C. § 1350 and is not deemed to be a part of the Report, nor is it to deemed to be "filed" for any purpose whatsoever.

/s/ JOSEPH P. PELLEGRINO, JR.
Joseph P. Pellegrino, Jr.
Chief Financial Officer

March 11, 2020