UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended May 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 0-50761

AngioDynamics, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**11-3146460**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
14 Plaza Drive Latham, New York	**12110**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code (518) 795-1400

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

Title of each class	Name of each exchange on which registered
Common Stock, par value $.01 per share	**NASDAQ Global Select Market**

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

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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

Large accelerated filer x

Accelerated filer ☐

Non-accelerated filer ☐

Smaller reporting company ☐

Emerging growth company ☐

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

As of November 30, 2018, the last business day of the registrant’s most recently completed second fiscal quarter, the aggregate market value of the registrant’s common stock held by non-affiliates was approximately $723,763,752 computed by reference to the last sale price of the common stock on that date as reported by The NASDAQ Global Select Market.

As of July 22, 2019 there were 37,276,981 shares of the registrant’s common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

The information required for Part III of this Annual Report on Form 10-K is incorporated by reference to the registrant’s Proxy Statement for its 2019 Annual Meeting of Stockholders to be filed within 120 days of the registrant's fiscal year ended May 31, 2019.

AngioDynamics, Inc. and Subsidiaries

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Part I

Item 1. ***Business.***

OVERVIEW

AngioDynamics, Inc. (together with its subsidiaries, "AngioDynamics," the "Company," "we," "our" or "us") designs, manufactures and sells a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for the treatment of peripheral vascular disease, vascular access and for use in oncology and surgical settings. Our devices are generally used in minimally invasive, image-guided procedures.

HISTORY

AngioDynamics was founded in Queensbury, N.Y., U.S., in 1988. Queensbury was chosen due to its location in the heart of "Catheter Valley," an area in New York's Adirondack Region named for its long history of catheter and other medical device manufacturing. Initially dedicated to the research and development of products used in interventional radiology, AngioDynamics began manufacturing and shipping product in the early 1990s. The Company soon became well established as a producer of diagnostic catheters for non-coronary angiography and thrombolytic delivery systems.

The Company grew over the following years as a result of acquisitions of companies including RITA Medical Systems in January 2007, Oncobionic in May 2008, Vortex Medical, Inc. in October 2012, Clinical Devices in August 2013, the assets of Diomed in June 2008 and the assets of Microsulis Medical Limited in January 2013. These acquisitions added product lines including market-leading ablation and NanoKnife systems, vascular access products, angiographic products and accessories, dialysis products, drainage products, thrombolytic products, embolization products, venous products and targeted renal therapy products. In May 2012, AngioDynamics acquired Navilyst Medical, bringing market-leading Fluid Management systems into our portfolio. The acquisition significantly expanded the Company's scale, doubling its share of the vascular access market while building critical mass in the peripheral vascular market.

In August 2018, the Company acquired the BioSentry product line from Surgical Specialties, LLC. In September 2018, the Company acquired RadiaDyne, which consisted of the OARtrac dose monitoring technology along with endorectal and vaginal balloons.

On May 31, 2019, the Company completed the sale of the Fluid Management business (the “Divestiture”) and all of the assets used primarily in connection with the Fluid Management business to Medline Industries, Inc. (“Medline”) pursuant to an asset purchase agreement dated April 17, 2019 (the “Asset Purchase Agreement”).

Headquartered in Latham, N.Y., with manufacturing primarily out of the Queensbury facility, AngioDynamics is publicly traded on the NASDAQ stock exchange under the symbol ANGO.

PRODUCTS

Our product offerings fall within three Global Business Units (GBUs): Oncology/Surgery ("OS"), Vascular Interventions and Therapies ("VIT") and Vascular Access ("VA"). All products discussed below have been cleared for sale in the United States by the Food and Drug Administration ("FDA"). International regulatory clearances vary by product and jurisdiction.

Oncology/Surgery Products

AngioDynamics offers a range of comprehensive ablation technologies, including thermal tissue ablation systems (microwave energy and radiofrequency energy), surgical resection and the NanoKnife System, an innovative alternative to thermal ablation.

IRE Ablation

NanoKnife®

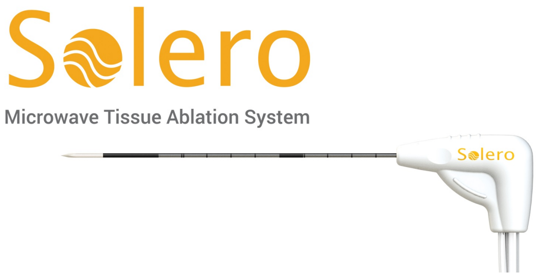
The NanoKnife® System is an alternative to traditional thermal ablation that has received 510(k) clearance from the Food and Drug Administration for the surgical ablation of soft tissue. The NanoKnife Ablation System utilizes low energy direct current electrical pulses to permanently open pores in target cell membranes. These permanent pores or nano-scale defects in the cell membranes result in cell death. The treated tissue is then removed by the body's natural processes in a matter of weeks, mimicking natural cell death. Unlike other ablation technologies, NanoKnife Ablation System does not achieve tissue ablation using thermal energy.

The NanoKnife Ablation System consists of two major components: a Low Energy Direct Current, or LEDC Generator and needle-like electrode probes. Up to six (6) electrode probes can be placed into or around the targeted soft tissue. Once the probes are in place, the user enters the appropriate parameters for voltage, number of pulses, interval between pulses, and the pulse length into the generator user interface. The generator then delivers a series of short electric pulses between each electrode probe. The energy delivery is hyperechoic and can be monitored under real-time ultrasound.

Microwave Ablation

Solero Microwave Tissue Ablation (MTA) System

The Solero MTA System features the Solero Microwave (MW) Generator and the specially designed Solero MW Applicators. The solid state Solero MW Generator with a 2.45 GHz operating frequency can power up to 140W for optimized power delivery and fast ablations. The Solero MW Applicator's optimized ceramic tip diffuses MW energy nearly spherically, and its patented cooling channel with thermocouple provides real-time monitoring to help protect non-targeted tissue during the ablation. In addition, the Solero MTA System offers physicians scalability with a single applicator designed for multiple, predictable ablation volumes by varying time and wattage. Solero is a single applicator system able to complete up to a 5 cm ablation in six (6) minutes at maximum power.



The Solero MTA System and Accessories are indicated in the U.S. for the ablation of soft tissue during open procedures. The Solero MTA System is not intended for cardiac use.

Radiofrequency Ablation

StarBurst Radiofrequency Ablation Devices

Radiofrequency Ablation (RFA) products use radiofrequency energy to provide a minimally invasive approach to ablating solid cancerous or benign tumors. Our StarBurst Radiofrequency Ablation devices deliver radiofrequency energy to raise the temperature of cells above 45-50°C, causing cellular death. The physician inserts the disposable needle electrode device into the targeted body tissue, typically under ultrasound, CT or Magnetic Resonance Imaging (MRI) guidance.

During the procedure, our system automatically adjusts the amount of energy delivered in order to maintain the temperature necessary to ablate the targeted tissue. For a typical 5 cm ablation using our StarBurst ® Xli-enhanced disposable device, the ablation process takes approximately ten minutes. The RFA system consists of a radiofrequency generator and a family of disposable devices.

In addition to thermal ablation systems and NanoKnife, AngioDynamics also offers Habib 4X Surgical Resection devices that are used in minimally invasive laparoscopic surgery procedures in surgical specialties such as Hepato-Biliary, GI, Surgical Oncology, Transplant Surgery and Urology (Partial Nephrectomy Resections). It is clinically indicated to assist in coagulation of tissue during intraoperative and laparoscopic procedures.

BioSentry Tract Sealant System

The BioSentry tract sealant system deploys a self-expanding hydrogel plug into the pleural space following a percutaneous lung biopsy, creating an airtight seal that closes the pleural puncture. Depth markings provide accurate and consistent placement based on CT-guided measurements, while depth adjustment wheel and locking mechanisms ensure proper plug deployment.

The hydrogel plug is made from a synthetic tissue-friendly polymer that fully reabsorbs into the body and the co-axial adapter mates with a coaxial needle to ensure a proper fit and delivery of the plug.

The BioSentry Tract Sealant System is indicated for sealing pleural punctures to significantly reduce the risk of pneumothoraxes (air leaks) associated with percutaneous, transthoracic needle lung biopsies and to provide accuracy in marking a biopsy location for visualization during surgical resection.

IsoLoc Endorectal Balloon

The IsoLoc Endorectal Balloon's unique, customer-driven design is the result of collaborations with Radiation Oncologists, Therapists and Physicists with one goal in mind - to create a new standard for endorectal balloons (ERB) in the oncology space.

The design of IsoLoc not only addresses patient comfort, but also simplifies three challenging clinical scenarios that many physicians face when using radiation therapy for and/or in relation to the prostate. First, it's gas-release tip removes rectal gas and reduces prostate motion for gaseous patients. Secondly, the structure of the ERB aids in defining the anatomy for difficult planning scenarios with post-radical patients. Lastly, IsoLoc repositions and lifts the bowel in patients that have a low-lying bowel.

Alatus Vaginal Balloon Packing System

Alatus was developed with the patient's comfort in mind and to assist the physician to move healthy tissue away from the radiation treatment field. Prior to Alatus, the clinician would push gauze into the vagina to move the bladder and bowel away from the radiation treatment field. Inserting gauze into the vagina can be uncomfortable before treatment and unpleasant at the end of treatment as it tends to dry out before removing.

Studies have shown, relative to traditional gauze packing, Alatus offers a more comfortable procedure for the patient, reduces the need for post-procedural pain medication and moves healthy tissue away from the radiation field.

OARtrac

The OARtrac system provides real-time dose data physically delivered during many cancer treatments, thus allowing physicians to know the delivered dose. The dose information obtained during the treatment is compared with the planned dose that the Radiation Oncologist expected to provide the patient. The OARtrac System itself does not stop the radiation treatment, or change the radiation delivery, but provides dose data which the Radiation Oncologist can use to adjust a patient's treatment plan.

Vascular Interventions and Therapies Products

AngioDynamics’ Vascular Interventions and Therapies product offerings support the medical areas of Venous Insufficiency, Thrombus Management, Peripheral Products (Core) and Fluid Management, which was divested on May 31, 2019.

Thrombus Management

Our Thrombus Management portfolio includes the proprietary AngioVac venous drainage cannula and circuit, as well as catheter directed thrombolytic devices and Uni-Fuse infusion catheters. AngioDynamics offers a range of options when treating thrombus and removing fresh, soft thrombi or emboli.

AngioVac

Our AngioVac venous drainage system includes a Venous Drainage Cannula and Extracorporeal Circuit. The cannula is indicated for use as a venous drainage cannula and for removal of fresh, soft thrombi or emboli during extracorporeal bypass. The cardiopulmonary bypass circuit is indicated for use in procedures requiring extracorporeal circulatory support for periods of up to six hours. AngioVac devices are for use with other manufacturers' off-the-shelf pump, filter and reinfusion cannula, to facilitate venous drainage as part of an extracorporeal bypass procedure.

The AngioVac venous drainage cannula is a 22 French coil-reinforced cannula designed with a balloon actuated, expandable funnel shaped distal tip. The proprietary funnel shaped tip enhances venous drainage flow when the balloon is inflated, prevents clogging of the cannula with commonly encountered undesirable intravascular material, and facilitates embolic removal of such extraneous material.

Thrombolytic Catheters

Thrombolytic catheters are used to deliver thrombolytic agents, which are drugs that dissolve blood clots in hemodialysis access grafts, arteries, veins and surgical bypass grafts. AngioDynamics' Uni-Fuse infusion catheter features pressure response outlets, a patented, time-tested slit technology that provides a consistent, even distribution of fluid volume along the entire length of the infusion pattern, resulting in a 12-fold advantage over standard side-hole catheters.[1]

We also offer the Pulse-Spray infusion system for high pressure, pulsed delivery of lytic agent to shorten treatment time, and the Speed Lyser infusion system built for dialysis grafts and fistulas.

<u>Peripheral Products (Core)</u>

We offer a comprehensive portfolio for minimally invasive peripheral products. Product categories include an extensive line of angiographic catheters and diagnostic and interventional guidewires, percutaneous drainage catheters and coaxial micro-introducer kits.

Angiographic Products and Accessories

Angiographic products and accessories are used during peripheral diagnostic and interventional procedures. These products permit physicians to reach targeted locations to deliver contrast media for visualization purposes and therapeutic agents and devices, such as percutaneous transluminal angioplasty (PTA) balloons. Angiographic products consist of angiographic catheters and guidewires.

[1] Yusuf SW, et al. Immediate and Early Follow-up Results of Pulse Spray Thrombolysis in Patients with Peripheral Ischaemia. British Journal of Surgery 1995; 82:338-340.

Our angiographic catheter line includes the following brands, all with radiopaque tips to assure excellent visibility under fluoroscopy:

- Soft-Vu flush catheters are available in flush and selective varieties. Flush catheters are used in procedures where a high flow of contrast is required for “big picture” diagnostics. Anomalies discovered through a flush angiogram may require further investigation into a vessel of interest. Soft-Vu selective catheters are used to gain access to smaller or more distal vessels and advance the catheter or wire into the diseased section.
- Accu-Vu sizing catheters feature radiopaque marker bands at the distal (farthest away) portion of the catheter to provide a highly accurate measurement of the patient’s anatomy. This enables precise measurement for interventional devices (stents, filters, etc.)
- AngiOptic catheters have total catheter radiopacity, ensuring tip-to-hub visibility. This catheter is also constructed with a firm tip material that enhances stability during high-flow injections, providing excellent pushability.
- Mariner catheters have a hydrophilic coating that, when combined with water, reduces friction. This makes insertion potentially easier and more comfortable for the patient, and can also be used for advancing through tortuous anatomy.

AngioDynamics guidewires include Nit-Vu (featuring a kink-resistant NiTi alloy core facilitating smooth navigation through tortuous vasculature and accurate wire control) and PTFE (Polytetrafluoroethylene) Coated (fixed core and movable core) diagnostic guidewires.

AngioDynamics catheters and guidewires are available in more than 500 tip configurations and lengths.

Drainage Products

Drainage products percutaneously drain abscesses and other fluid pockets. An abscess is a tender inflamed mass that typically must be drained by a physician. AngioDynamics offers two brands of drainage catheters for multi-purpose/general, nephrostomy and biliary drainage: Total Abscession and Exodus. Each offer features and benefits depending on case presentation and physician preferences.

Micro Access Kits

Our Micro Access sets provide interventional physicians a smaller introducer system for minimally-invasive procedures. Our Micro Access product line provides physicians with the means to choose from the wide selection of configurations, including guidewire, needle and introducer options. Two lines are available in stiff/standard, 10cm or 15cm and echogenic for visibility under ultrasound guidance: Micro Introducer Kit and Ministick Max.

Fluid Management

Our Fluid Management product offerings include the NAMIC® Fluid Management portfolio. Since 1969, the NAMIC product line has been a leader in providing clinicians high quality, dependable devices that help in the diagnosis and treatment of cardiovascular and peripheral vascular disease. The NAMIC product line includes an extensive offering of manifolds, contrast management systems, closed fluid systems, guidewires, disposable transducers and interventional accessories. These devices are utilized together and allow clinicians to aspirate or inject contrast, saline, remove waste and monitor invasive blood pressures throughout the procedure. This business was divested on May 31, 2019.

Venous Insufficiency

VenaCure EVLT laser system

Our VenaCure EVLT (endovenous laser treatment) system products are used in endovascular laser procedures to treat superficial venous disease (varicose veins). Superficial venous disease is a malfunction of one or more valves in the leg veins whereby blood refluxes or does not return to the heart, thereby pooling in the legs and leading to symptoms such as pain, swelling and ulcerations. VenaCure EVLT uses laser energy to stop the reflux by ablating (collapsing and destroying) the affected vein. Blood is then re-routed to other healthy veins.

The procedure is minimally invasive and generally takes less than an hour, allowing the patient to quickly return to normal activities with minimal post-operative pain.

VenaCure EVLT is sold as a system that includes diode laser hardware and procedure kits which include disposable laser fiber components, an access sheath, access wires and needles. Our VenaCure EVLT 1470 nanometer wavelength laser allows physicians to more efficiently heat the vein wall using lower power settings thereby reducing the risk of collateral damage. The NeverTouch tip fiber eliminates laser tip contact with the vein wall, which in turn minimizes perforations of the vein wall that typically result in less pain and bruising as compared to traditional bare-tip fibers. The NeverTouch tip also maximizes ultrasonic visibility, making it easier for physicians to use. Procedure kits are available in a variety of lengths and configurations to accommodate varied patient anatomies.

The VenaCure EVLT system comes with a comprehensive physician training program and extensive marketing support.

Asclera (polidocanol) Injection

Asclera (polidocanol) injection is the only FDA-approved sclerosant with an indication to treat uncomplicated spider veins and uncomplicated reticular veins in the lower extremity. AngioDynamics distributes Asclera through a global agreement with the manufacturer and their distributor. The agreement to sell the Asclera product was terminated in April 2019.

Vascular Access Products

Our portfolio of Vascular Access products includes a broad offering of peripherally inserted central catheters (PICCs), midline catheters, implantable ports, dialysis catheters and related accessories and supplies. These products are used to deliver, primarily, short-term drug therapies, such as chemotherapeutic agents and antibiotics, into the central venous system. Delivery to the circulatory system allows drugs to mix with a large volume of blood as compared to intravenous drug delivery into a superficial vessel. Our Vascular Access product family also includes the proprietary BioFlo catheter.

BioFlo®

AngioDynamics offers BioFlo, the only catheter on the market with Endexo Technology, a material more resistant to thrombus accumulation, in vitro (based on platelet count). Endexo Technology is a permanent and non-eluting polymer that is “blended” into the polyurethane from which the catheter is made. It is present throughout the catheter, including the extraluminal, intraluminal and cut catheter surface of the tip. Endexo Technology remains present for the life of the catheter. BioFlo’s long-term durability and efficacy is intended to provide clinicians a high degree of safety and confidence in providing better patient care and improved patient outcomes. BioFlo catheters are available across the Vascular Access family of products, including PICCs, midlines, ports and dialysis catheters.

PICCs

A peripherally inserted central catheter, or PICC, is a long thin catheter that is inserted into a peripheral vein, typically in the upper arm, and advanced until the catheter tip terminates in a large vein in the chest near the heart to obtain intravenous access. PICCs can typically be used for prolonged periods of time and provide an alternative to central venous catheters. Our PICC product offerings include:

- *BioFlo® PICC*: Our BioFlo line is the only power injectable PICC available that incorporates Endexo Technology into the manufacturing and design of the catheter. Advanced features such as large lumen diameters allow the BioFlo® PICC to deliver the power injection flow rates required for contrast-enhanced Computed Tomography (CT) scans compatible with up to 325 psi CT injections.
- *BioFlo® Midline:* The BioFlo Midline Catheter is an effective solution to preserving a patient’s peripheral access. It provides a cost-effective alternative to multiple IV site rotations for patients who need short-term venous access.
- *Xcela PICC*: The Xcela® PICC line is designed to provide a high degree of safety, ease and confidence in patient care. Advanced features such as large lumen diameters allow the Xcela® PICC to deliver the power injection flow rates required for contrast-enhanced CTs compatible with up to 325 psi CT injections.

- *PASV® Valve Technology:* The PASV® Valve Technology is available in both BioFlo and Xcela lines and is designed to automatically resist backflow and reduce blood reflux that could lead to catheter-related complications.

Ports

Ports are implantable devices utilized for the central venous administration of a variety of medical therapies and for blood sampling and diagnostic purposes. Central venous access facilitates a more systemic delivery of treatment agents, while mitigating certain harsh side effects of certain treatment protocols and eliminating the need for repeated access to peripheral veins. Depending upon needle gauge size and the port size, a port can be utilized for up to approximately 2,000 accesses once implanted in the body. Our ports are used primarily in systemic or regional short- and long-term cancer treatment protocols that require frequent infusions of highly concentrated or toxic medications (such as chemotherapy agents, antibiotics or analgesics) and frequent blood samplings. Our port products and accessories include:

- *BioFlo® Port*: Our BioFlo Port is the only port available that features a catheter with Endexo Technology. Advanced features of the BioFlo Port include multiple profile and catheter options, a large septum area for ease of access and the ability to administer contrast through a CT injection for purposes of imaging.
- *SmartPort®*: The Smart Port power-injectable port with Vortex technology offers the ability for a clinician to access a vein for both the delivery of medications or fluids and for administering power-injected contrast to perform a (CT) scan. The ability to access a port for power-injected contrast studies eliminates the need for additional needle sticks in the patient's arm and wrist veins. Once implanted, repeated access to the bloodstream can be accomplished with greater ease and less discomfort. Our Smart Port is available in mini and low-profiles to accommodate more patient anatomies.
- *Vortex®:* Our Vortex port technology line of ports is a clear-flow port technology that, we believe, revolutionized port design. With its rounded chamber, the Vortex port is designed to have no sludge-harboring corners or dead spaces. This product line consists of titanium, plastic and dual-lumen offerings.
- *PASV® Valve Technology:* The PASV® Valve Technology is designed to automatically resist backflow and reduce blood reflux that could lead to catheter-related complications.
- *LifeGuard®:* The LifeGuard Safety Infusion Set and The LifeGuard Vision are used to infuse our ports and complement our port and vascular access catheters. The needles' low profile design is intended to allow clinicians to easily dress the site.

Dialysis Products

We market a complete line of dialysis products that provide short and long-term vascular access for dialysis patients. Dialysis, or cleaning of the blood, is necessary in conditions such as acute renal failure, chronic renal failure and end-stage renal disease (ESRD). We currently offer a variety of dialysis catheters, including:

- *BioFlo® DuraMax*: Our BioFlo DuraMax is the only dialysis catheter with Endexo Technology. Advanced features of the BioFlo DuraMax dialysis catheter include large inner diameter lumens designed for long term patency, a proprietary guidewire lumen to facilitate catheter exchanges and Curved Tip Technology that allows the catheter to self-center in the Superior Vena Cava (SVC).
- *DuraMax®:* The DuraMax catheter is a stepped-tip catheter designed to improve ease of use, dialysis efficiency and overall patient outcomes.

In addition, AngioDynamics also offers other renal therapies, including *DuraFlow™ Chronic Hemodialysis Catheter,* Schon Chronic Hemodialysis Catheter, EVENMORE Chronic Hemodialysis Catheter, EMBOSAFE™ Valved, Splitable Sheath Dilator and Perchik™ Button Suture Retention Device.

RESEARCH & DEVELOPMENT

Our growth depends in large part on the continuous introduction of new and innovative products, together with ongoing enhancements to our existing products. This happens through internal product development, technology licensing and strategic alliances. We recognize the importance of, and intend to continue to make investments in, research and development (R&D).

Our R&D teams work closely with our marketing teams, sales force and regulatory and compliance teams to incorporate customer feedback into our development and design process. We believe that we have a reputation among interventional physicians as a strong partner for developing high quality products because of our tradition of close physician collaboration, dedicated market focus, responsiveness and execution capabilities for product development and commercialization.

COMPETITION

We encounter significant competition across our product lines and in each market in which our products are sold. These markets are characterized by rapid change resulting from technological advances, scientific discoveries and changing customer needs and expectations. We face competitors, ranging from large manufacturers with multiple business lines, to small manufacturers that offer a limited selection of products.

Our primary device competitors include: Boston Scientific Corporation; Cook Medical; Medical Components, Inc. (Medcomp); TeleFlex Medical; BD Medical Technology; Smiths Medical, a subsidiary of Smiths Group plc; Medtronic; Merit Medical; Terumo Medical Corporation; Johnson and Johnson and Total Vein Systems.

We believe our products compete primarily based on their quality, clinical outcomes, ease of use, reliability, physician familiarity and cost-effectiveness. In the current environment of managed care, which is characterized by economically motivated buyers, consolidation among health care providers, increased competition and declining reimbursement rates, we have been increasingly required to compete on the basis of price. We believe that our continued competitive success will depend upon our ability to develop or acquire scientifically advanced technology, apply our technology cost-effectively across product lines and markets, attract and retain skilled personnel, obtain patent or other protection for our products, obtain required regulatory and reimbursement approvals, manufacture and successfully market our products either directly or through outside parties, and maintain sufficient inventory to meet customer demand.

SALES AND MARKETING

We sell our broad line of quality devices in the United States primarily through a direct sales force and internationally through a combination of direct sales and distributor relationships. We support our customers and sales organization with a marketing staff that includes product managers, customer service representatives and other marketing specialists.

We focus our sales and marketing efforts on interventional radiologists, interventional cardiologists, vascular surgeons, urologists, interventional and surgical oncologists and critical care nurses.

MANUFACTURING

We manufacture certain proprietary components and products and then assemble, inspect, test and package our finished products. By designing and manufacturing many of our products from raw materials, and assembling and testing our subassemblies and products, we believe that we are able to maintain better quality control, ensure compliance with applicable regulatory standards and our internal specifications, and limit outside access to our proprietary technology. We have custom-designed proprietary manufacturing and processing equipment and have developed proprietary enhancements for existing production machinery.

We own two primary manufacturing properties providing capabilities which include manufacturing, service, engineering and research, distribution warehouses and offices. These facilities are registered with the FDA and have been certified to ISO 13485 standards, as well as the CMD/CAS Canadian Medical Device Regulations. ISO 13485 is a quality system standard that satisfies European Union regulatory requirements, thus allowing us to market and sell our products in European Union countries. Our manufacturing facilities are subject to periodic inspections by regulatory authorities to ensure compliance with domestic and non-U.S. regulatory requirements. See “Government Regulation” section of this report for additional information. See Item 2 "Properties" for details on each manufacturing location.

In February 2017, we announced the consolidation of our global operations into two facilities located in New York State. Operations in our Denmead, U.K. and Manchester, GA. manufacturing facilities were consolidated into the Glens Falls and Queensbury, NY facilities during fiscal year 2018. On May 31, 2019, the Company completed the sale of the Fluid Management business which included one of the two Glens Falls, NY manufacturing facilities. As of June 1, 2019, the Company will manufacture most of its product from the Queensbury, NY facility and one small facility in Glens Falls, NY.

BACKLOG

Historically, we ship the majority of products within 24-48 hours of receiving an order, and accordingly our backlog is not significant.

INTELLECTUAL PROPERTY

Patents, trademarks and other proprietary rights are very important to our business. We also rely upon trade secrets, manufacturing know-how, technological innovations and licensing opportunities to maintain and improve our competitive position. We regularly monitor and review third-party proprietary rights, including patents and patent applications, as available, to aid in the development of our intellectual property strategy, avoid infringement of third-party proprietary rights, and identify licensing opportunities.

The Company owns an extensive portfolio of patents and patent applications in the United States and in certain foreign countries. The portfolio also includes exclusive licenses to third party patents and applications.

Most of our products are sold under the AngioDynamics trade name or trademark. Additionally, products are sold under product trademarks and/or registered product trademarks owned by AngioDynamics, Inc., or an affiliate or subsidiary. Some products contain trademarks of companies other than AngioDynamics.

See Part I. Item 3 of this report for additional details on litigation regarding proprietary technology.

LITIGATION

We operate in an industry characterized by extensive patent litigation. Patent litigation can result in significant damage awards and injunctions that could prevent the manufacture and sale of affected products, or result in significant royalty payments in order to continue selling those products. The medical device industry is also susceptible to significant product liability claims. These claims may be brought by individuals seeking relief on their own behalf or purporting to represent a class. In addition, product liability claims may be asserted against us in the future based on events we are not aware of at the present time. At any given time, we are involved in a number of product liability actions. For additional information, see both Part I. Item 3 of this report and Note 17 to the consolidated financial statements in this Annual Report on Form 10-K.

GOVERNMENT REGULATION

The products we manufacture and market are subject to regulation by the Food and Drug Administration (FDA) under the Federal Food, Drug, and Cosmetic Act, or FDCA, and international regulations to our specific target markets.

United States FDA Regulation

Before a new medical device can be introduced into the market, a manufacturer generally must obtain marketing clearance or approval from the FDA through either a 510(k) submission (a premarket notification) or a premarket approval application (PMA).

The 510(k) procedure is available only in particular circumstances. The 510(k) clearance procedure is available only if a manufacturer can establish that its device is “substantially equivalent” in intended use and in safety and effectiveness to a “predicate device,” which is a legally marketed device with 510(k) clearance in class I or II or preamendment status based upon products commercially distributed on or before May 28, 1976. After a device receives 510(k) clearance, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, requires a new 510(k) clearance. The 510(k) clearance procedure including questions and responses may take up to 12 months. In some cases, supporting clinical data may be required. The FDA may determine that a new or modified device is not substantially equivalent to a predicate device or may require that additional information, including clinical data, be submitted before a determination is made, either of which could significantly delay the introduction of new or modified device products. If a device cannot demonstrate substantial equivalence, it may be subject to either a de novo submission or a PMA.

The PMA application procedure is more comprehensive than the 510(k) procedure and typically takes more time to complete. The PMA application must be supported by scientific evidence providing pre-clinical and clinical data relating to the safety and efficacy of the device and must include other information about the device and its components, design, manufacturing and labeling. The FDA will approve a PMA application only if a reasonable assurance that the device is safe and effective for its intended use can be provided. As part of the PMA application review, the FDA will inspect the manufacturer’s facilities for compliance with its Quality System Regulation, or QSR. As part of the PMA approval the FDA may place restrictions on the device, such as requiring additional patient follow-up for an indefinite period of time. If the FDA’s evaluation of the PMA application or the manufacturing facility is not favorable, the FDA may deny approval of the PMA application or issue a “not approvable” letter. The FDA may also require additional clinical trials, which can delay the PMA approval process by several years. After the PMA is approved, if significant changes are made to a device, its manufacturing or labeling, a PMA supplement containing additional information must be filed for prior FDA approval.

Historically, our products have been introduced into the market using the 510(k) procedure.

The process of FDA submissions requires extensive and expensive validations and testing. The financial outlay for this is large and requires a significant amount of time. Recent changes in both regulations and FDA perspectives have increased both time and testing requirements, which have caused significant delays and increased costs for approvals. The parameters for increased testing have and will continue to cause severe delays. The increased focus by the FDA on such issues as chemical identification of all colorants, non-acceptance of certain colorants (certain forms of carbon black) and other concerns, continue to cause problems and delays. In addition, changes to existing products call into question previously approved devices and result in additional costs for testing and material analysis.

The devices manufactured by us are also subject to the QSR, which imposes elaborate testing, control, documentation and other quality assurance procedures. Every phase of production, including raw materials, components and subassembly, manufacturing, testing, quality control, labeling, tracing of consignees after distribution and follow-up and reporting of complaint information is governed by the FDA's QSR. Device manufacturers are required to register their facilities and list their products with the FDA and certain state agencies. The FDA periodically inspects manufacturing facilities and, if there are alleged violations, the operator of a facility must correct them or satisfactorily demonstrate the absence of the violations or face regulatory action. Penalties for failure to maintain compliance to the QSR include warning letters and potentially consent decrees. Failure to maintain the QSR appropriately could result in the development of further warning letters. In addition, non-compliance with applicable FDA requirements can result in, among other things, 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.

Other U.S. Regulatory Bodies

We and our products are subject to a variety of state and local laws in those jurisdictions where our products are, or will be, marketed. We and our products are also subject to a variety of 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. In addition, 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.

International Regulation

Internationally, all of our current products are considered medical devices under applicable regulatory regimes, and we anticipate that this will be true for all of our future products. Sales of medical devices are subject to regulatory requirements in many countries. The regulatory review process may vary greatly from country to country. For example, the European Union has a dedicated set of regulations regarding medical devices, specifically regulating their design, manufacturing, clinical trials, labeling and adverse event reporting. Devices that comply with those requirements are entitled to bear a Conformité Européenne, or CE Mark, indicating that the device conforms to the essential requirements of the applicable directives and can be commercially distributed in countries that are members of the European Union. Similar regulations are in place for Canada, Japan, China and most other countries.

In some cases, we rely on our international distributors to obtain regulatory approvals, complete product registrations, comply with clinical trial requirements and complete those steps that are customarily taken in the applicable jurisdictions.

International 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.

The process of obtaining approval to distribute medical products is costly and time-consuming in virtually all the major markets where we sell medical devices. We cannot assure that any new medical devices we develop will be approved in a timely or cost-effective manner or approved at all. There can be no assurance that new laws or regulations regarding the release or sale of medical devices will not delay or prevent sale of our current or future products.

THIRD-PARTY REIMBURSEMENT AND ANTI-FRAUD AND CORRUPT PRACTICES REGULATION

United States

The delivery of our devices is subject to regulation by the Department of Health and Human Services (HHS) and comparable state and non-U.S. agencies responsible for reimbursement and regulation of health care items and services. U.S. laws and regulations are imposed primarily in conjunction with the Medicare and Medicaid programs, as well as the government's interest in regulating the quality and cost of health care. Foreign governments also impose regulations in conjunction with their health care reimbursement programs and the delivery of health care items and services.

U.S. federal health care laws apply when we or customers submit claims for items or services that are reimbursed under Medicare, Medicaid, or other federally-funded health care programs. The principal U.S. federal laws include: (1) the Anti-kickback Statute which prohibits offers to pay or receive remuneration of any kind for the purpose of including or rewarding referrals of items or services reimbursable by a federal health care program; (2) the False Claims Act which prohibits the submission of false or otherwise improper claims for payment to a federally-funded health care program, including claims resulting from a violation of the Anti-kickback Statute; (3) the Stark law which prohibits physicians from referring Medicare or Medicaid patients to a provider that bills these programs for the provision of certain designated health services if the physician (or a member of the physician's immediate family) has a financial relationship with that provider; and (4) health care fraud statutes that prohibit false statements and improper claims to any third-party payer. There are often similar state false claims, anti-kickback, and anti-self-referral and insurance laws that apply to state-funded Medicaid and other health care programs and private third-party payers. In addition, the U.S. Foreign Corrupt Practices Act (FCPA) can be used to prosecute companies in the U.S. for arrangements with physicians or other parties outside the U.S. if the physician or party is a government official of another country and the arrangement violates the law of that country.

International

Our success in international 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 vary significantly by country. The main types of healthcare payment systems are government sponsored healthcare and private insurance. Reimbursement approval must be obtained individually in each country in which our products are marketed. Outside the U.S., we generally rely on our distributors to obtain reimbursement approval in the countries in which they will sell our products. There can be no assurance that reimbursement approvals will be received.

INSURANCE

Our product liability insurance coverage is limited to a maximum of $10 million per product liability claim and an annual aggregate policy limit of $10 million, subject to a self-insured retention of $500,000 per occurrence and $2 million in the aggregate. The policy covers, subject to policy conditions and exclusions, claims of bodily injury and property damage from any product sold or manufactured by us.

There is no assurance that this level of coverage is adequate. We may not be able to sustain or maintain this level of coverage and cannot assure you that adequate insurance coverage will continue to be available on commercially reasonable terms, or at all. A successful product liability claim or other claim, with respect to uninsured or underinsured liabilities, could have a material adverse effect on our business.

ENVIRONMENTAL, HEALTH AND SAFETY

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. Our operations are also subject to laws and regulations related to occupational health and safety. We maintain safety, training and maintenance programs as part of our ongoing efforts to ensure compliance with applicable laws and regulations.

Although we believe that we have complied with environmental, health and safety 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.

EMPLOYEES

As of May 31, 2019, we had approximately 1,050 full time employees. As a result of the Fluid Management divestiture, on June 1, 2019 we had approximately 750 full time employees. None of our employees are represented by a labor union and we have never experienced a work stoppage.

Executive Officers of the Company

The following table sets forth certain information with respect to our executive officers.

Name	Age	Position
James C. Clemmer	55	President and Chief Executive Officer
Michael C. Greiner	46	Executive Vice President and Chief Financial Officer
Stephen A. Trowbridge	45	Senior Vice President and General Counsel
David D. Helsel	55	Senior Vice President Global Operations
Warren G. Nighan	50	Senior Vice President Quality and Regulatory Affairs
Benjamin H. Davis	54	Senior Vice President Business Development
Chad T. Campbell	49	Senior Vice President and General Manager, Vascular Access
Brent J. Boucher	52	Senior Vice President and General Manager, Oncology/Surgery
Robert A. Simpson	47	Senior Vice President and General Manager, Vascular Interventions and Therapies
Kim L. Seabury	52	Senior Vice President, Information Technology

James C. Clemmer became our President and Chief Executive Officer in April 2016. Prior to joining AngioDynamics, Mr. Clemmer served as President of the $1.8 billion medical supplies segment at Covidien plc. where he directed the strategic and day-to-day operations for global business divisions that collectively manufactured 23 different product categories. In addition, he managed global manufacturing, research and development, operational excellence, business development and all other functions associated with the medical supplies business. Prior to his role at Covidien, Mr. Clemmer served as Group President at Kendall Healthcare, where he managed the U.S. business across five divisions and built the strategic plan for the medical supplies segment before it was spun off from Tyco. Mr. Clemmer began his career at Sage Products, Inc. Mr. Clemmer currently serves on the Board of Directors for AngioDynamics and Lantheus Medical Imaging. Mr. Clemmer is a graduate of the Massachusetts College of Liberal Arts, where he served as interim president from August 2015 until March 2016.

Michael C. Greiner joined AngioDynamics as the Executive Vice President and Chief Financial Officer in August 2016. Mr. Greiner most recently served as the Chief Financial Officer at Extreme Reach. Prior to Extreme Reach, Mr. Greiner served as Senior Vice President Corporate Finance and Chief Accounting Officer at Cimpress N.V. (Vistaprint N.V.), Global Controller for GE's Water and Processing Technologies division and in leadership roles at Bausch & Lomb and Wyeth. Mr. Greiner is also an advisor for Mirah, Inc., a measurement-based behavioral health Company, and serves as the President of the Foundation for Faces of Children. Mr. Greiner received a Bachelor and Master of Science in Accounting from Fairleigh Dickinson University and Master of Business Administration from the Columbia Business School. Mr. Greiner is also a Certified Public Accountant (inactive).

Stephen A. Trowbridge joined AngioDynamics as corporate counsel in June 2008, becoming our Vice President and General Counsel in June 2010 and Senior Vice President and General Counsel in August 2013. Mr. Trowbridge manages AngioDynamics' legal matters, including corporate governance, mergers and acquisitions, finance, securities regulation, litigation, regulatory matters, intellectual property and compliance. Mr. Trowbridge also oversees the Company's clinical affairs and healthcare economics departments. Prior to AngioDynamics, Mr. Trowbridge served as Corporate Counsel at Philips Healthcare and Intermagnetics General Corporation. Mr. Trowbridge began his career with Cadwalader, Wickersham & Taft LLP in the firm's Mergers and Acquisitions and Securities Group. Mr. Trowbridge received a Bachelor of Science in Science and Technology Studies from Rensselaer Polytechnic Institute, a Juris Doctor from the University of Pennsylvania Law School, and a Master of Business Administration from Duke University's Fuqua School of Business.

David D. Helsel currently services as Senior Vice President of Global Operations and has been with AngioDynamics since December 2017. Prior to joining AngioDynamics he was Senior Vice President, Global Supply Chain, at Hill-Rom Holdings for almost three years. Before that, Mr. Helsel worked at Haemonetics for three years where he served as Executive Vice President for Global Manufacturing and also spent almost nineteen years in various positions with increasing responsibility at Covidien, including Vice President of Operations for the Surgical Solutions Division and Medical Supplies Division. An expert in Lean and Six Sigma, Mr. Helsel also served as Global Director of Operational Excellence, supporting sixty-three manufacturing facilities. Mr. Helsel holds a Bachelor of Science in Mechanical Engineering from LeTourneau University.

Warren G. Nighan joined AngioDynamics as the Senior Vice President of Quality and Regulatory Affairs in April 2017. Before joining AngioDynamics, Mr. Nighan was as a quality and regulatory consultant to clients in FDA-regulated industries, specializing in execution and management of quality systems implementation and remediation. Previously, Mr. Nighan served as the Executive Vice President of Global Clinical, Quality Affairs and Regulatory Affairs at Haemonetics Corporation, Vice President of Quality/Regulatory/Clinical/Technical Services at St. Jude Medical’s Atrial Fibrillation Division, and Corporate Vice President of Quality/Compliance at Tyco Healthcare/Covidien (Medtronic). Mr. Nighan earned a Bachelor and Master of Science in Nursing from Northeastern University’s Bouvé College of Health Sciences.

Benjamin H. Davis joined AngioDynamics as Senior Vice President of Business Development in March 2015. Prior to joining AngioDynamics, Mr. Davis most recently was the Vice President of Business Integration at C.R. Bard, Inc. where he also served as the Divisional Head of Business Development from 2004-2013. Before joining C.R. Bard, Inc., Mr. Davis held the position of Chief Financial Officer and Treasurer at Axya Medical Inc. He holds a Bachelor of Science in Business Administration from Bryant College and Master in Business Administration in Finance from Bentley University Graduate School of Business.

Chad T. Campbell joined AngioDynamics in May 2016 as the Senior Vice President and General Manager for the Vascular Access Global Business Unit. In his role, Mr. Campbell oversees research and development and global commercialization of the Global Business Unit’s portfolio. Mr. Campbell joined AngioDynamics from Medtronic where he served as the Vice President of Marketing for the Patient Care and Safety business after serving as the Vice President of Marketing for the SharpSafety business at Covidien (Medtronic). During his tenure at Covidien, Mr. Campbell also held roles including Director of Marketing, Area Vice President of Sales, Region Manager, Product Manager and Account Manager. Mr. Campbell received a Bachelor of Arts from the University of Kentucky.

Brent J. Boucher is our Senior Vice President and General Manager of our Oncology business. Prior to joining AngioDynamics in November 2017, Mr. Boucher served as Executive in Residence for PDI's Infection Prevention business. Prior to that, he spent 20 years at Covidien where he served as General Manager for several global businesses, including Lung Solutions, Surgical Solutions and Respiratory Care. Mr. Boucher is a graduate of North Dakota State University.

Robert A. Simpson joined AngioDynamics in February 2017 as the Senior Vice President and General Manager for the Vascular Interventions & Therapies Global Business Unit. In his role, Mr. Simpson oversees research and development and global commercialization of the Global Business Unit’s portfolio. Prior to AngioDynamics, Mr. Simpson served as the Vice President and General Manager of the Patient Care Global Business at Medtronic. He was responsible for leading the business strategy and operations while ensuring global execution. Prior to his role within the Patient Care business, Mr. Simpson led strategy and business development for Medtronic’s Patient Monitoring & Recovery business. Mr. Simpson also held various leadership roles in Sales and Marketing during his time at Covidien (Medtronic) and Alcon (Novartis). Mr. Simpson received a Bachelor of Science in Management Science - Finance from the State University of New York at Geneseo and has completed a comprehensive, executive leadership development program at Babson College.

Kim L. Seabury is our Senior Vice President, Information Technology and joined the Company in September 2011. Prior to joining AngioDynamics, Mrs. Seabury served as Vice President of Emerging Technologies and Product Development for Pitney Bowes Software, managing global software development teams for both core products and emerging SaaS solutions. Prior to her role at Pitney Bowes, Mrs. Seabury held several key leadership positions at MapInfo Corporation, including Global Managing Director of IT, IT Business Applications Director and Director of Web Operations. Mrs. Seabury is certified in PSI, Operational Excellence, ITIL and is a Six-Sigma Green Belt. In addition, Mrs. Seabury has extensive experience in project management and has participated in a variety of leadership development programs. Mrs. Seabury holds a Bachelor of Science degree in Applied Arts and Science from Rochester Institute of Technology.

AVAILABLE INFORMATION

Our corporate headquarters is located at 14 Plaza Drive, Latham, New York 12110. Our phone number is (518) 795-1400. Our website is *www.angiodynamics.com*.

We make available, free-of-charge through our website, 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) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after we electronically file or furnish such materials to the Securities and Exchange Commission, or SEC. In addition, our website includes, among other things, charters of the various committees of our Board of Directors and our code of business conduct and ethics applicable to all employees, officers and directors. Any stockholder also may obtain copies of these documents, free of charge, by sending a request in writing to our investor relations department: AngioDynamics, 14 Plaza Drive, Latham, N.Y. 12110, Attention: Saleem Cheeks. Information on our website or connected to our website is not incorporated by reference into this Annual Report on Form 10-K.

Item 1A. ***Risk Factors.***

In addition to the other information contained in this Annual Report on Form 10-K, the following risk factors should be considered carefully in evaluating the Company's business. Our financial and operating results are subject to a number of factors, many of which are not within our control. These factors include those set forth below. Our business, financial condition or results of operations could be materially and adversely affected by any of these risks. Additional risks not presently known to us or that we currently deem immaterial may also adversely affect our business, financial condition or results of operations.

RISKS RELATED TO OUR BUSINESS

Consolidation in the healthcare industry could have an adverse effect on our revenues and results of operations.

Many healthcare industry companies, including medical device companies, are consolidating to create new companies with greater market power. As the healthcare industry consolidates, competition to provide goods and services to industry participants will become more intense. These industry participants may try to use their market power to negotiate price concessions or reductions for medical devices that incorporate components produced by us. If we are forced to reduce our prices because of consolidation in the healthcare industry, our revenues would decrease and our consolidated earnings, financial condition, or cash flow would suffer.

We face intense competition in the medical device industry. We may be unable to compete effectively with respect to technological innovation and price which may have an adverse effect on our revenues, financial condition or results of operations.

The markets for our products are highly competitive, and we expect competition to continue to intensify. We may not be able to compete effectively, and we may lose market share to our competitors. Our primary device competitors include: Boston Scientific Corporation; Cook Medical; Medical Components, Inc. (Medcomp); TeleFlex Medical; BD Medical Technology; Smiths Medical, a subsidiary of Smiths Group plc; Medtronic; Merit Medical; Terumo Medical Corporation; Johnson and Johnson and Total Vein Systems. Many of our competitors have substantially greater:

- financial and other resources to devote to product acquisitions, research and development, marketing and manufacturing;
- variety of products;
- technical capabilities;
- history of developing and introducing new products;
- patent portfolios that may present an obstacle to our conduct of business;
- name recognition; and
- distribution networks and in-house sales forces.

Our competitors may succeed in developing technologies and products earlier, in obtaining patent protection or regulatory clearance earlier, or in commercializing new products or technologies more rapidly than us. Our competitors may also develop products and technologies that are superior to those we are developing or that otherwise could render our products obsolete or noncompetitive. In addition, we may face competition from providers of other medical therapies, such as pharmaceutical companies, that may offer non-surgical therapies for conditions that are currently, or in the future, may be treated using our products. Our products are generally sold at higher prices than those of our competitors. However, in the current environment of managed care, which is characterized by economically motivated buyers, consolidation among healthcare providers, increased competition and declining reimbursement rates, we are increasingly being required to compete on the basis of price. If we are not able to compete effectively, our market share and revenues may decline.

We face intense competition from other companies, and our inability to continue to effectively develop, acquire and/or market new products and technologies could have a material adverse effect on our business, results of operations and/or financial condition.

The medical device business is intensely competitive and is characterized by rapid technological change, frequent product introductions and evolving customer requirements. Our customers consider many factors when choosing among products, including features and reliability, quality, technology, clinical or economic outcomes, availability, price and services provided by the manufacturer. We face competition globally from a wide range of companies, some of which may have greater resources than us, which may enable them to adapt faster than us to customer needs or changes in customer requirements. Product introductions, alternative products or enhancements by competitors that provide better features, clinical outcomes or economic value and/or offer lower pricing may make our products or proposed products obsolete or less competitive. In addition, the trend of consolidation in the medical device industry and among our customers could result in greater competition and pricing pressures.

As a result, we engage in product development and improvement programs to maintain and improve our competitive position. These development and improvement programs involve significant investment in research and development, clinical trials and regulatory approvals and may require more time than anticipated to bring such products to market. We may not, however, be successful in enhancing existing products or developing new products or technologies that will achieve regulatory approval, be developed or manufactured in a cost effective manner, obtain appropriate intellectual property protection or receive market acceptance and we may be unable to recover all or a meaningful part of our investment in such products or technologies. Additionally, there can be no assurance that the size of the markets in which we compete will increase above existing levels or not decline, that we will be able to maintain, gain or regain market share or that we can compete effectively on the basis of price or that the number of procedures in which our products are used will increase above existing levels or not decline.

As part of our business strategy, we also pursue the acquisition of complementary businesses, technologies and products. We may not be able to identify appropriate acquisition candidates, consummate transactions or obtain agreements with favorable terms. Further, once a business is acquired, any inability to successfully integrate the business, decreases in customer loyalty or product orders, failure to retain and develop its workforce, failure to establish and maintain appropriate controls or unknown or contingent liabilities could adversely affect our ability to realize the anticipated benefits of any acquisition. The integration of an acquired business, whether or not successful, requires significant efforts which may result in additional expenses and divert the attention of our management and technical personnel from other projects. These transactions are inherently risky, and there can be no assurance that any past or future transaction will be successful. If we fail to develop and successfully manufacture and launch new products, generate satisfactory clinical results, provide sufficient economic value, enhance existing products, or identify, acquire and integrate complementary businesses, technologies and products or if we experience a decrease in market size or market share or declines in average selling price or procedural volumes, or otherwise fail to compete effectively, our business, results of operations and/or financial condition could be adversely affected.

If we are not able to successfully execute our business development strategies our business and prospects could be materially impacted.

We expect to continue to engage in business development activities including evaluating acquisitions, technology licensing arrangements and other opportunities. These activities may result in substantial investment of our time and financial resources. Our success developing products or expanding into new markets from such activities will depend on a number of factors, including our ability to find suitable opportunities for acquisition or investment; competition from competitors seeking similar opportunities; whether we are able to negotiate terms that are satisfactory to us or at all; and our ability to successfully integrate the acquired company, business, product, technology or research into our existing operations, including the ability to adequately fund acquired in-process R&D projects and to maintain adequate controls over the combined operations. If we are unsuccessful in our business development activities, we may not be able to achieve our growth goals or we may incur significantly more expenses than we anticipate.

If we do not maintain our reputation with interventional physicians, interventional and surgical oncologists and critical care nurses our growth will be limited and our business could be harmed.

Physicians typically influence the medical device purchasing decisions of the hospitals and other healthcare institutions in which they practice. Consequently, our reputation with interventional physicians, interventional and surgical oncologists and critical care nurses is crucial to our continued growth. We believe that we have built a positive reputation based on the quality of our products, our physician-driven product development efforts, our marketing and training efforts and our presence at medical society meetings. Any actual or perceived diminution in the quality of our products, or our failure or inability to maintain these other efforts, could damage our reputation with interventional physicians and cause our growth to be limited and our business to be harmed.

If we fail to develop or market new products and enhance existing products, we could lose market share to our competitors and our results of operations could suffer.

The market for interventional devices is characterized by rapid technological change, new product introductions, technological improvements, changes in physician requirements and evolving industry standards. To be successful, we must continue to develop and commercialize new products and to enhance versions of our existing products. Our products are technologically complex and require significant research, planning, design, development and testing before they may be marketed. This process generally takes at least 12 to 18 months from initial concept and may take up to several years. In addition, product life cycles are relatively short because medical device manufacturers continually develop smaller, more effective and less expensive versions of existing devices in response to physician demand.

Our success in developing and commercializing new and enhanced versions of our products is affected by our ability to:

- recruit engineers;
- timely and accurately identify new market trends;
- accurately assess customer needs;
- minimize the time and costs required to obtain regulatory clearance or approval;
- adopt competitive pricing;
- timely manufacture and deliver products;
- accurately predict and control costs associated with the development, manufacturing and support of our products; and
- anticipate and compete effectively with our competitors' efforts.

Market acceptance of our products depends in part on our ability to demonstrate that our products are cost-effective and easier to use, as well as offer technological advantages. Additionally, we may experience design, manufacturing, marketing or other difficulties that could delay or prevent our development, introduction or marketing of new products or new versions of our existing products. As a result of such difficulties and delays, our development expenses may increase and, as a consequence, our results of operations could suffer.

Development and sales of our products are dependent on a number of factors beyond our control, and our inability to make and complete research and development investments, enhance the product development process and be innovative to solve customer needs with respect to the respective products may adversely affect our business, financial condition and results of operations.

A significant aspect of our growth strategy is the continued market development of products including NanoKnife, AngioVac, OARtrac and BioFlo products.

There can be no guarantee that we will be able to develop and manufacture additional next generation or updated products on commercially favorable terms, or at all. NanoKnife and AngioVac are developing technologies and the inability of either of them to achieve clinical acceptance, as well as our inability to generate meaningful clinical data to convince providers of the clinical and economic benefits of our BioFlo platform, could severely limit our ability to drive revenue growth.

The future prospects of many of our high growth products, such as NanoKnife and AngioVac, rely on continued generation of clinical data pursuant to clinical trials conducted by us, our competitors or other third parties. If the results of these trials are not what we expect, or are perceived as unfavorable by the market, our business could be materially harmed.

As a part of the market development and regulatory process of obtaining marketing clearance for new products and new indications for existing products, we conduct and participate in numerous clinical trials with a variety of study designs, patient populations and trial endpoints. Negative, unexpected or inconsistent clinical data from existing or future clinical trials conducted by us, by our competitors or by third parties, or the market's or regulators' negative perception of this clinical data, may adversely impact our ability to obtain product approvals and successfully market our products and our business, financial condition, results of operations or future prospects may be materially impacted.

Our business and prospects depend heavily on NanoKnife, which is currently approved for the surgical ablation of soft tissue. If we are unable to secure expanded specific regulatory approvals for NanoKnife, our business and prospects will be materially harmed.

Our NanoKnife System is indicated for the surgical ablation of soft tissue. The long-term prospects for our NanoKnife business may rely on securing expanded indications for specific disease states and treatments. Based on our current indication, our ability to promote NanoKnife and provide training with respect to the use of NanoKnife is limited to the surgical ablation of soft tissue. In the fourth quarter of our fiscal year ended May 31, 2019, we received approval from the FDA to initiate our DIRECT clinical trial to study the use of NanoKnife for the treatment of Stage III pancreatic cancer. If we are not able to successfully complete this trial and secure clearances or approvals for expanded indications for our NanoKnife System, including for the treatment of Stage III pancreatic cancer, or if expanded indications are significantly delayed or limited, our business and prospects may be materially harmed and we may need to delay our initiatives or even significantly curtail operations.

Our business and prospects rely heavily upon our ability to successfully complete clinical trials, including our NanoKnife DIRECT Clinical study. We may choose to, or may be required to, suspend, repeat or terminate our clinical trials if they are not conducted in accordance with regulatory requirements, the results are negative or inconclusive or the trials are not well designed.

Clinical trials must be conducted in accordance with the applicable laws and regulations in the jurisdictions in which the clinical trials are conducted, including FDA's current Good Clinical Practices. The clinical trials are subject to oversight by the FDA, regulatory agencies in other jurisdictions, ethics committees and institutional review boards at the medical institutions where the clinical trials are conducted. Clinical trial protocols may require a large number of patients to be enrolled in the trials. Patient enrollment is a function of many factors, including the size of the patient population for the target indication, the proximity of patients to clinical sites, the eligibility criteria for the trial, the existence of competing clinical trials and the availability of alternative or new treatments. Clinical trials may be suspended by the FDA or by a regulatory agency in another jurisdiction at any time if the FDA or the regulatory agency finds deficiencies in the conduct of these trials or it is believed that these trials expose patients to unacceptable health risks.

We, the FDA or regulatory agencies in other jurisdictions might delay or terminate our clinical trials for various reasons, including:

- Enrolled patients may have unforeseen adverse side effects;
- New therapies may become the standard of care while we are conducting our clinical trials, which may require us to revise or amend our clinical trial protocols or terminate a clinical trial;
- Fatalities may occur during a clinical trial due to medical problems that may or may not be related to clinical trial treatments;
- Patient enrollment in the clinical trials may be insufficient or significantly delayed.

Patients may be discouraged from enrolling in our clinical trials if the trial protocol requires them to undergo extensive follow-up to assess the safety and effectiveness of NanoKnife treatments, or if they determine that the treatments received under the trial protocols are not attractive or involve unacceptable risks or discomforts. Patients may also not participate in our clinical trials if they choose to participate in contemporaneous clinical trials of competing products. In addition, the inclusion of critically ill patients in our clinical trials may result in deaths or other adverse medical events for reasons that may not be related to our NanoKnife System.

In addition, we rely on contract research organizations, or CROs, with respect to conducting our clinical trials. We may experience significant cost overruns associated with, and we may encounter difficulties managing, these CROs.

Termination of our clinical trials or significant delays in completing our clinical trials could have a materially negative impact on our financial condition and prospects.

We, our competitors or other third parties, may engage in clinical trials with respect to our products. The results of these trials may be unfavorable, or perceived as unfavorable by the market, and could have a material adverse effect on our business, financial condition or results of operations.

Our products may be the subject of clinical trials conducted by us, our competitors or third parties for the purposes of obtaining regulatory clearances or to gather market data. Unfavorable or inconsistent clinical data from existing or future clinical trials conducted by us, by our competitors or by third parties, or the FDA's or the market's perception of this clinical data, may adversely impact our ability to obtain product approvals, our position in, and share of, the markets in which we participate and our business, financial condition, results of operations or future prospects.

Undetected defects may increase our costs and impair the market acceptance of our products.

Our products have occasionally contained, and may in the future contain, undetected defects. When these problems occur, we must divert the attention of our engineering personnel to address them. There is no assurance that we will not incur warranty or repair costs, be subject to liability claims for damages related to product defects, or experience manufacturing, shipping or other delays or interruptions as a result of these defects in the future. Our insurance policies may not provide sufficient protection should a claim be asserted. In addition, the occurrence of defects may result in significant customer relations problems and injury to our reputation, and may impair market acceptance of our products.

If we are unable to convince customers that our products can improve the cost structure of their business, our revenue growth and profitability may be materially adversely impacted.

Worldwide initiatives to contain healthcare costs have led government and the private sector to enact cost containment efforts as a means of managing the growth of health care utilization. Common techniques include policies on price regulation, competitive pricing, bidding and tender mechanics, coverage and payment, comparative effectiveness of therapies, technology assessments, and managed-care arrangements. These changes are causing the marketplace to put increased emphasis on the delivery of more cost-effective medical devices and therapies. Government programs, including Medicare and Medicaid, private health care insurance, and managed-care plans have attempted to control costs by limiting the amount of reimbursement they will pay for particular procedures or treatments, tying reimbursement to outcomes, shifting to population health management, and other mechanisms designed to constrain utilization and contain costs. Simultaneously, hospitals are redefining their role in health care delivery as many assume much more risk and control of the total cost of patient care. To successfully make this transformation health systems are consolidating, purchasing or partnering with physicians, post-acute care providers, while also narrowing networks thus allowing greater control over outcomes. Today, many systems are becoming ‘mini’ payer/provider organizations. These newly redesigned health systems are creating mechanisms such as value analysis and centralized purchasing functions that set pricing and in some cases limit the number of vendors that can participate in the purchasing program. Hospitals are also aligning interests with physicians through employment and other arrangements, such as gainsharing, where a hospital agrees with physicians to share any realized cost savings resulting from the physicians’ collective change in practice patterns such as standardization of devices where medically appropriate. This has created an increasing level of price sensitivity among customers for our products. Some third-party payers must also approve coverage and set reimbursement levels for new or innovative devices or therapies before they will reimburse health care providers who use the medical devices or therapies. Even though a new medical device may have been cleared for commercial distribution, we may find limited demand for the device until coverage and sufficient reimbursement levels have been obtained from governmental and private third-party payers. In addition, some private third-party payers require that certain procedures or that the use of certain products be authorized in advance as a condition of reimbursement. International examples of cost containment initiatives and health care reforms advancing clinical outcomes as the key to market access are emerging in France, Germany, the Netherlands and the UK. This new criteria can severely restrict coverage, reduce reimbursement and delay access to key markets with requirements for incremental clinical benefit and coverage with evidence development.

Cost-containment efforts of group purchasing organizations could adversely affect our selling prices, financial position and results of operations.

Many of our existing and potential customers have become members of group purchasing organizations, or GPOs, and integrated delivery network, or IDNs, in an effort to reduce costs. GPOs and IDNs negotiate pricing arrangements with healthcare product manufacturers and distributors and offer the negotiated prices to affiliated hospitals and other members. GPOs and IDNs typically award contracts on a category-by-category basis through a competitive bidding process. Bids are generally solicited from multiple manufacturers with the intention of driving down pricing. Due to the highly competitive nature of the GPO and IDN contracting processes, we may not be able to obtain market prices for our products or obtain or maintain contract positions with major GPOs and IDNs, which could adversely impact our profitability. Also, sales through a GPO or IDN can be significant to our business and if we are unable to retain contracts with our customers, or acquire additional contracts, our financial results may be negatively impacted.

We are dependent on single and limited source suppliers which subjects our business and results of operations to risks of supplier business interruptions.

We currently purchase significant amounts of several key products and product components from single and limited source suppliers and anticipate that we will do so for future products as well. Any delays in delivery of or shortages in those or other products and components could interrupt and delay manufacturing of our products and result in the cancellation of orders for our products. Any or all of these suppliers could discontinue the manufacture or supply of these products and components at any time. Due to FDA and other business considerations, we may not be able to identify and integrate alternative sources of supply in a timely fashion or at all. Any transition to alternate suppliers may result in production delays and increased costs and may limit our ability to deliver products to our customers. Furthermore, if we are unable to identify alternative sources of supply, we would have to modify our products to use substitute components, which may cause delays in shipments, increased design and manufacturing costs and increased prices for our products.

In addition, we purchase certain products as a distributor for the manufacturer of those products. Operational, quality or regulatory issues of the manufacturers of the products we distribute could constrain or interrupt the availability of those products or services. Any constraint or interruption in the supply of finished products that we distribute could have a material adverse effect on our ability to sell products, our financial condition and our results of operations.

We are heavily dependent on third-party distributors to generate a substantial portion of international revenues and are at the risk of these distributors also selling for our competitors along with being financially viable to be able to effectively distribute our products and make timely payment.

Outside of North America we rely heavily on third party distributors, either on a country-by-country basis or on a multi-country, regional basis, to market, sell and distribute our products. International distributors accounted for approximately 81% of international revenues for the year ended May 31, 2019. In certain circumstances, distributors may also sell competing products, or products for competing diagnostic modalities, and may have incentives to shift sales towards those competing products. As a result, we cannot assure you that our international distributors will increase or maintain our current levels of unit sales or increase or maintain our current unit pricing, which, in turn, could have a material adverse effect on our business, results of operations, financial condition and cash flows. In addition, there is a risk that our distributors will not be financially viable due to current economic and/or regulatory events in their respective countries.

We rely on distributors for the commercialization of our products in countries in which we do not have a direct sales and marketing presence. If we are unable to maintain our relationships or establish direct sales capabilities, our sales may significantly decline, materially impacting our financial position and results of operations.

We have no or limited direct sales or marketing capabilities in some of the regions and countries in which our products are sold, including, among others, China, Japan, Brazil, the Middle East and many European countries. We have entered into distribution agreements with third parties to market and sell our products in those countries in which we do not have a direct sales force. If we are unable to maintain or enter into such distribution arrangements on acceptable terms, or at all, we lose significant revenue or be unable to achieve our growth aspirations. Moreover, to the extent that we enter into distribution arrangements with other companies, our revenues, if any, will depend on the terms of any such arrangements and the efforts of others. These efforts may turn out not to be sufficient and our third-party distributors may not effectively sell our products. In addition, although our contract terms require our distributors to comply with all applicable laws regarding the sale of our products, including anti-competition, anti-corruption, anti-money laundering and sanctions laws, we may not be able to ensure proper compliance. If our distributors fail to effectively market and sell our products in full compliance with applicable laws, our financial position and results of operations could be materially impacted.

Failure to secure adequate reimbursement for our products could materially impair our ability to grow revenue and drive profitability.

Our products are used in medical procedures generally covered by government or private health plans.

In general, a third-party payor only covers a medical product or procedure when the plan administrator is satisfied that the product or procedure 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 many instances, third-party payors use price schedules that do not vary 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 where they provide coverage or may offer reimbursement that is not sufficient to cover the cost of our products.

Third-party payors who cover the cost of medical products or equipment, in addition to allowing a general charge for the procedure, often maintain lists of exclusive suppliers or approved lists of products deemed to be cost-effective. Authorization from those third-party payors is required prior to using products that are not on these lists as a condition of reimbursement. If our products are not on the approved lists, healthcare providers must determine if the additional cost and effort required in obtaining prior authorization, and the uncertainty of actually obtaining coverage, is justified by any perceived clinical benefits from using our products.

Finally, the advent of contracted fixed rates per procedure has made it difficult to receive reimbursement for disposable products, even if the use of these products improves clinical outcomes. 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. 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 cost of our products will be incorporated into the overall cost of a procedure and not be separately reimbursed. As a result, we cannot be certain that hospital administrators and physicians will purchase our products, despite the clinical benefits and opportunity for cost savings that we believe can be derived from their use. If hospitals and physicians cannot obtain adequate reimbursement for our products or the procedures in which they are used, our business, financial condition, results of operations, and cash flows could suffer a material adverse impact.

Our success in international 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 vary significantly by country. The main types of healthcare payment systems are government sponsored healthcare and private insurance. Reimbursement approval must be obtained individually in each country in which our products are marketed. Outside the United States, we generally rely on our distributors to obtain reimbursement approval in the countries in which they will sell our products. There can be no assurance that reimbursement approvals will be received. The failure to secure reimbursement approvals in international markets could materially impact our financial position and results of operations.

If a product liability claim is brought against us or our product liability insurance coverage is inadequate, our business could be harmed.

The design, manufacture and marketing of the types of medical devices we sell entail an inherent risk of product liability. Our products are used by physicians to treat seriously ill patients. We are periodically subject to product liability claims, and patients or customers may in the future bring claims against us in a number of circumstances and for a number of reasons, including if our products were misused, if a component of our product fails, if our manufacture or design was flawed, if the product produced unsatisfactory results or if the instructions for use and operating manuals and disclosure of product related risks for our products were found to be inadequate. In addition, individuals or groups seeking to represent a class may file suit against us. The outcome of litigation, particularly class action lawsuits, is difficult to assess or quantify. Plaintiffs in these types of lawsuits often seek recovery of very large or indeterminate amounts, including not only actual damages, but also punitive damages. The magnitude of the potential losses relating to these lawsuits may remain unknown for substantial periods of time.

We carry a product liability policy with a limit of $10.0 million per product liability claim and an aggregate policy limit of $10.0 million, subject to a self-insured retention of $0.5 million per occurrence and $2.0 million in the aggregate. We believe, based on claims made against us in the past, our existing product liability insurance coverage is reasonably adequate to protect us from any liabilities we might incur. However, there is no assurance that this coverage will be sufficient to satisfy any claim made against us. In addition, we may not be able to continue to maintain 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 any coverage in the future. Additionally, if one or more product liability claims is brought against us for uninsured liabilities or is in excess of our insurance coverage, our financial condition and results of operations could be negatively impacted. Further, such claims may require us to recall some of our products, which could result in significant costs to us and could divert management’s attention from our business.

We may be exposed to risks associated with acquisitions, including integration risks and risks associated with methods of financing. Accordingly, completed acquisitions may not enhance our financial position or results of operations or create value for our shareholders as they are based on projections and assumptions which are uncertain and subject to change.

Part of our growth strategy is to acquire businesses and technologies that are complementary to ours. There is no assurance that acquisition opportunities will be available on acceptable terms, or at all, or that we will be able to obtain necessary financing or regulatory approvals. Any acquisitions that we do undertake would be accompanied by the risks commonly encountered in acquisitions, including the:

- potential disruption of our business while we evaluate opportunities, complete acquisitions and develop and implement new business strategies to take advantage of these opportunities;
- inability of our management to maximize our financial and strategic position by incorporating an acquired technology or business into our existing offerings;
- our inability to achieve the cost savings and operating synergies anticipated in the acquisition, which would prevent us from achieving the positive earnings gains expected as a result of the acquisition;
- diversion of management attention from ongoing business concerns to integration matters;
- difficulty of maintaining uniform standards, controls, procedures and policies;
- challenges in demonstrating to our customers that the acquisition will not result in adverse changes in customer service standards or business focus;
- possible cash flow interruption or loss of revenue as a result of change of ownership transition matters;
- difficulty of assimilating the operations and personnel of acquired businesses;

- potential loss of key employees of acquired businesses, and the impairment of relationships with employees and customers as a result of changes in management; and
- uncertainty as to the long-term success of any acquisitions we may make including the impact on contingent liabilities.

There is no assurance that any completed acquisition will be accretive to our margins or profits in the short term or in the long term. If we proceed with one or more significant acquisitions in which the consideration consists of cash, a substantial portion of our available cash could be used to consummate the acquisitions. If we consummate one or more acquisitions in which the consideration consists of capital stock, our stockholders could suffer significant dilution of their interest in us. In addition, we could incur or assume significant amounts of indebtedness in connection with acquisitions. Further, acquisitions could also result in significant goodwill and/or amortization charges for acquired businesses or technologies.

Failure to attract additional capital which we may require to expand our business could curtail our growth.

We may require additional capital to expand our business. If cash generated internally is insufficient to fund capital requirements, we will require additional debt or equity financing. In addition, we may require financing to fund any significant acquisitions we may seek to make. Needed financing may not be available or, if available, may not be available on terms satisfactory to us and may result in significant stockholder dilution. Covenants in our existing financing agreements may also restrict our ability to obtain additional debt financing. If we fail to obtain sufficient additional capital in the future, we could be forced to curtail our growth strategy by reducing or delaying capital expenditures and acquisitions, selling assets, restructuring our operations or refinancing our indebtedness.

We may never realize the expected benefits from the divestiture of our Fluid Management business. In addition, the divestiture of our Fluid Management business entails significant personnel, systems and infrastructure changes that could cause operational disruptions.

The divestiture of our Fluid Management business is part of a strategy to transform ourselves into a high growth, highly profitable, medical technology company. If we are unable to achieve our growth and profitability objectives due to competition, lack of acceptance of our products, failure to generate favorable clinical data or gain regulatory approvals, or other risks as described in this section, or due to other events, we will not be successful in transforming our business and may not see the appropriate market valuation. Moreover, our Fluid Management business generated substantial revenue, earnings and cash flow, which we have not replaced. While over time we expect to replace this revenue and cash flow by investing in, acquiring and accelerating higher margin revenue streams, there is a risk we will be unable to replace the revenue, earnings and cash flow that our Fluid Management business generated, or that the cost of such will be higher than expected. If we are unable to achieve our profit and growth objectives, such failure will be exacerbated by the loss of revenue, earnings and cash flow generated by our divested Fluid Management business, and could materially impact our financial position and results of operations, resulting in a decline in our stock price.

The sale of our Fluid Management business required us to restructure significant personnel, systems and infrastructure. As part of this process, many long-term employees with valuable institutional knowledge were transitioned to Medline, and key systems were replicated or relocated across both companies. In some instances, existing processes and systems could not be fully replicated, requiring that we enter into short term transition service arrangements with Medline, and vice versa, under which the parties perform certain services for each other pending establishment of new processes and systems. Although these transitions were thoroughly planned, it is not unlikely in a transaction of this complexity that disruptions could occur. If disruptions to our financial controls, IT, administrative support, manufacturing or regulatory processes occur, and if such disruptions prove to be more severe than our planning anticipated, this could have a material adverse effect on our business.

International and national economic and industry conditions constantly change, and could materially and adversely affect our business, financial condition and results of operations.

Our business, financial condition and results of operation are affected by many changing economic, industry and other conditions beyond our control. Actual or potential changes in international, national, regional and local economic, business and financial conditions, including recession, inflation and trade protection measures, may negatively affect consumer preferences, perceptions, spending patterns or demographic trends, any of which could adversely affect our business, financial condition or results of operations. Our customers may experience financial difficulties or be unable to borrow money to fund their operations, which may adversely impact their ability or decision to purchase or pay for our products. Disruptions in the credit markets have previously resulted, and could again result, in volatility, decreased liquidity, widening of credit spreads, and reduced availability of financing. There can be no assurance that future financing will be available to us on acceptable terms, if at all. An inability to obtain necessary additional financing on acceptable terms may have an adverse impact on us and on our ability to execute on our business plan.

We are subject to a variety of market and financial risks due to our international operations that could adversely affect those operations or our profitability and operating results.

Although our stock is traded on the NASDAQ Global Select Market, we are a global Company. Operations in countries outside of the U.S., which account for approximately 20% percent of our net sales for the fiscal year ended May 31, 2019, are accompanied by certain financial and other risks that would not be faced by a company operating purely within the U.S. We intend to continue to pursue growth opportunities in sales outside the U.S., especially in emerging markets, which could expose us to greater risks associated with international sales and operations. Our profitability and international operations are, and will continue to be, subject to a number of risks and potential costs, including:

- fluctuations in currency exchange rates;
- healthcare reform legislation;
- multiple non-U.S. regulatory requirement that are subject to change and could restrict our ability to manufacture and sell our products;
- local product preferences and product requirements;
- longer-term receivables than are typical in the U.S.;
- trade protection measures and import or export licensing requirements;
- less intellectual property protection in some countries outside the U.S. than exists in the U.S.;
- different labor regulations and workforce instability;
- political instability;
- the potential payment of U.S. income taxes on earnings of certain foreign subsidiaries subject to U.S. taxation upon repatriation;
- the expiration and non-renewal of foreign tax rulings;
- potential negative consequences from changes in or interpretation of tax laws; and
- economic instability and inflation, recession or interest rate fluctuations.

There are recent legislative proposals to tax profits of U.S. affiliates which are earned abroad. While it is impossible for us to predict whether these and other proposals will be implemented, or how they will ultimately impact us, they may materially impact our results of operations if, for example, our profits earned abroad are subject to U.S. income tax, or we are otherwise disallowed deductions as a result of these profits.

On June 23, 2016, the United Kingdom (U.K.) held a referendum in which voters approved an exit from the E.U., commonly referred to as “Brexit”. As a result of the referendum, it is expected that the British government will begin negotiating the terms of the U.K.’s future relationship with the E.U. Although it is unknown what those terms will be, it is possible that there will be greater restrictions on imports and exports between the U.K. and E.U. countries and increased regulatory complexities. These changes may adversely affect our operations and financial results.

Finally, changes in currency exchange rates may reduce the reported value of our revenues outside the U.S, net of expenses, and cash flows. We cannot predict changes in currency exchange rates, the impact of exchange rate changes, nor the degree to which we will be able to manage the impact of currency exchange rate changes.

Continuing worldwide economic instability, including challenges faced by the Eurozone countries, could adversely affect our revenues, financial condition or results of operations.

Since fiscal year 2008, the global economy has been impacted by the sequential effects of an ongoing global financial crisis. There can be no assurance that there will not be further deterioration in the global economy. Our customers and vendors may experience financial difficulties or be unable to borrow money to fund their operations which may adversely impact their ability to purchase our products or to pay for our products on a timely basis, if at all. As with our customers and vendors, these economic conditions make it more difficult for us to accurately forecast and plan our future business activities. In addition, trade receivables are in many countries. Repayment of these receivables is dependent upon the financial stability of the economies of those countries.

In light of these global economic fluctuations, we continue to monitor the creditworthiness of customers located outside the U.S. Failure to receive payment of all or a significant portion of these receivables could adversely affect our results of operations. Further, there are concerns for the overall stability and suitability of the Euro as a single currency, given the economic and political challenges facing individual Eurozone countries. Continuing deterioration in the creditworthiness of the

Eurozone countries, the withdrawal of one or more member countries from the EU, or the failure of the Euro as a common European currency could adversely affect our revenues, financial condition or results of operations.

Our business could be harmed if we lose the services of our key personnel.

Our business depends upon our ability to attract and retain highly qualified personnel, including managerial, sales and technical personnel. We compete for key personnel with other companies, healthcare institutions, academic institutions, government entities and other organizations. We do not have written employment agreements with our executive officers, other than the CEO. Our ability to maintain and expand our business may be impaired if we are unable to retain our current key personnel or hire or retain other qualified personnel in the future. In addition, our sales force is highly talented and there is competition in the sales industry which could have an adverse effect on our business if there is significant turnover.

If we are unable to manage our growth profitably, our business, financial results and stock price could suffer.

Our future financial results will depend in part on our ability to profitably manage our growth. Management will need to maintain existing customers and attract new customers, recruit, retain and effectively manage employees, as well as expand operations and integrate customer support and financial control systems. If integration-related expenses and capital expenditure requirements are greater than anticipated or if we are unable to manage our growth profitably, our financial results and the market price of our common stock may decline.

In recent years we have begun to implement our operational excellence initiatives which include a number of restructuring, realignment and cost reduction initiatives. While we have realized some efficiencies from these actions, we may not realize the benefits of these initiatives to the extent we anticipated. Further, such benefits may be realized later than expected, and the ongoing difficulties in implementing these measures may be greater than anticipated, which could cause us to incur additional costs or result in business disruptions. In addition, if these measures are not successful or sustainable, we may undertake additional realignment and cost reduction efforts, which could result in significant additional charges. Moreover, if our restructuring and realignment efforts prove ineffective, our ability to achieve our other strategic goals and business plans may be adversely affected.

We may incur indebtedness which could impose operating and financial restrictions on us as a result of debt service obligations which could significantly limit our ability to execute our business strategy.

We may incur indebtedness in the future subject to limitations contained in the agreements governing our debt. The interest rate on potential borrowings could be a floating rate which could expose us to the risk of increased interest expense in the future. The terms of a credit facility could require us to comply with certain financial maintenance covenants. In addition, the terms of our indebtedness could also include certain covenants restricting or limiting our ability to take certain actions.

These covenants could adversely affect our ability to finance future operations or limit our ability to pursue certain business opportunities or take certain corporate actions. The covenants could also restrict our flexibility in planning for changes in our business and the industry and could make us more vulnerable to economic downturns and adverse developments.

Our ability to meet our cash requirements, including our debt service obligations, could be dependent upon our operating performance, which would be subject to general economic and competitive conditions and to financial, business and other factors affecting our operations, many of which could be beyond our control. We cannot provide assurance that our business operations would generate sufficient cash flows from operations to fund potential cash requirements and debt service obligations. If our operating results, cash flow or capital resources prove inadequate, we could face substantial liquidity problems and might be required to dispose of material assets or operations to meet our debt and other obligations. If we incurred indebtedness and were unable to service our debt, we could be forced to reduce or delay planned expansions and capital expenditures, sell assets, restructure or refinance our debt or seek additional equity capital, and we could be unable to take any of these actions on satisfactory terms or in a timely manner. Further, any of these actions may not be sufficient to allow us to service our potential debt obligations or could have an adverse impact on our business. Our potential debt agreements could limit our ability to take certain of these actions. Our failure to generate sufficient operating cash flow to pay our potential debts or to successfully undertake any of these actions could have a material adverse effect on us.

In addition, the degree to which we are leveraged as a result of potential indebtedness incurred in connection with an acquisition or otherwise could materially and adversely affect our ability to obtain additional financing for working capital, capital expenditures, acquisitions, debt service requirements or other purposes, could make us more vulnerable to general adverse economic, regulatory and industry conditions, could limit our flexibility in planning for, or reacting to, changes and opportunities in the markets in which we compete, could place us at a competitive disadvantage compared to our competitors that have less debt or could require us to dedicate a substantial portion of our cash flow to service our debt.

Our international sales and operations are subject to risks and uncertainties that vary by country and could have a material adverse effect on our business and/or results of operations.

Sales outside the United States accounted for approximately 20% of our net sales during our fiscal year ended May 31, 2019. We anticipate that sales from international operations will continue to represent a significant portion of our total sales, and we intend to continue our expansion into emerging and/or faster-growing markets outside the United States. Our sales and profitability from our international operations are subject to risks and uncertainties that can vary by country, and include those related to political and economic conditions, foreign currency exchange rate fluctuations, changes in tax laws, regulatory and reimbursement programs and policies, and the protection of intellectual property rights. These risks and uncertainties could have a material adverse effect on our business and/or results of operations.

Foreign currency exchange rate may adversely affect our business, financial condition and results of operations.

We are exposed to a variety of market risks, including the effects of changes in foreign currency exchange rates. Products manufactured in, and sold into, foreign markets represent a significant portion of our operations. When the United States dollar strengthens or weakens in relation to the foreign currencies of the countries in which we sell our products, such as the Euro, our United States dollar-reported revenue and income will fluctuate. The effects of currency rate fluctuations and changes in the relative values of currencies may, in some instances, have a significant effect on our business, financial condition, results of operations and cash flows.

Our goodwill, intangible assets and fixed assets are subject to potential impairment.

A significant portion of our assets consists of goodwill, intangible assets and fixed assets, the carrying value of which may be reduced if we determine that those assets are impaired.

Most of our intangible and fixed assets have finite useful lives and are amortized or depreciated over their useful lives on either a straight-line basis or over the expected period of benefit or as revenues are earned from the sales of the related products. The underlying assumptions regarding the estimated useful lives of these intangible assets are reviewed quarterly and more often if an event or circumstance occurs making it likely that the carrying value of the assets may not be recoverable and are adjusted through accelerated amortization if necessary. Whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable we test intangible assets for impairment based on estimates of future cash flows. If an intangible asset is considered to be impaired, the amount of the impairment will equal the excess of the carrying value over the fair value of the asset.

We review our single reporting unit for potential goodwill impairment in the third fiscal quarter of each year as part of our annual goodwill impairment testing, and more often if an event or circumstance occurs making it likely that impairment exists. We conduct impairment testing based on our current business strategy in light of present industry and economic conditions, as well as future expectations. The annual goodwill impairment review performed in December 2018 indicated no goodwill impairments. As a result of the sale of the Fluid Management business, the Company performed an impairment test as of April 17, 2019, the date of the announcement of the deal, which indicated no goodwill impairment.

If actual results differ from the assumptions and estimates used in the goodwill and intangible asset calculations, we could incur future impairment or amortization charges, which could negatively impact our results of operations.

We may be limited in our ability to utilize, or may not be able to utilize, net operating loss carryforwards to reduce our future tax liability.

IRC Section 382 and related provisions contain rules that limit for U.S. federal income tax purposes the ability of a Company that undergoes an “ownership change” to utilize its net operating loss carryforwards and certain other tax attributes existing as of the date of such ownership change. Our Federal net operating loss carryforwards as of May 31, 2019 after considering IRC Section 382 limitations are $90.1 million. The expiration of the Federal net operating loss carryforwards is as follows: $8.6 million between 2022 and 2023, $81.2 million between 2028 and 2037 and $0.3 million indefinitely. Our state net operating loss carryforwards as of May 31, 2019 after considering remaining IRC Section 382 limitations are $8.0 million which expire in various years from 2019 to 2038. Future ownership changes within the meaning of IRC Section 382 may also subject our tax loss carryforwards to annual limitations which would restrict our ability to use them to offset our taxable income in periods following the ownership changes.

See Note 11 to our consolidated financial statements included in our Annual Report on Form 10-K for the fiscal year ended May 31, 2019 for a further discussion of our tax loss carryovers.

Fluctuations in our effective tax rate and changes to tax laws may adversely affect us.

As an international company, we are subject to taxation in numerous countries, states and other jurisdictions. Our effective tax rate is derived from a combination of applicable tax rates in the various countries, states and other jurisdictions in which we operate. In preparing our financial statements, we estimate the amount of tax that will become payable in each of these jurisdictions. Our effective tax rate may, however, differ from the estimated amount due to numerous factors, including a change in the mix of our profitability from country to country and changes in tax laws. Any of these factors could cause us to experience an effective tax rate significantly different from previous periods or our current expectations, which could have an adverse effect on our business, financial condition and results of operations and cash flows.

We rely on the proper function, availability and security of information technology systems to operate our business as a cyber-attack or other breach of these systems could have a material adverse effect on our business, financial condition or results of operations.

We rely on information technology systems to process, transmit, and store electronic information in our day-to-day operations. Similar to other large multi-national companies, the size and complexity of our information technology systems makes them vulnerable to cyber-attacks, malicious intrusions, breakdowns, destructions, losses of data privacy, or other significant disruptions. Our information systems require an ongoing commitment of significant resources to maintain, protect, and enhance existing systems and develop new systems to keep pace with continuing changes in information processing technology, evolving systems and regulatory standards, the increasing need to protect patient and customer information, and changing customer patterns. In addition, third parties may attempt to hack into our products to obtain data relating to patients with our products or our proprietary information. Any failure by us to maintain or protect our information technology systems and data integrity, including from cyber-attacks, intrusions or other breaches, could result in the unauthorized access to patient data and personally identifiable information, theft of intellectual property or other misappropriation of assets, or otherwise compromise our confidential or proprietary information and disrupt our operations. Any of these events, in turn, may cause us to lose existing customers, have difficulty preventing, detecting, and controlling fraud, have disputes with customers, physicians, and other health care professionals, be subject to legal claims and liability, have regulatory sanctions or penalties imposed, have increases in operating expenses, incur expenses or lose revenues as a result of a data privacy breach or theft of intellectual property, or suffer other adverse consequences, any of which could have a material adverse effect on our business, financial condition or results of operations.

Any disaster at our manufacturing facilities could disrupt our ability to manufacture our products for a substantial amount of time, which could cause our revenues to decrease.

We conduct our manufacturing and assembly at facilities in Queensbury, New York and Glens Falls, New York. It would be difficult, expensive and time-consuming to transfer resources from one facility to the other, replace, or repair these facilities and our manufacturing equipment if they were significantly affected by a disaster. Additionally, we might be forced to rely on third-party manufacturers or to delay production of our products. Insurance for damage to our properties and the disruption of our business from disasters may not be sufficient to cover all of our potential losses and may not continue to be available to us on acceptable terms, or at all. In addition, if one of our principal suppliers were to experience a similar disaster, uninsured loss or under-insured loss, we might not be able to obtain adequate alternative sources of supplies or products or could face significant delays and incur substantial expense in doing so. Any significant uninsured loss, prolonged or repeated disruption, or inability to operate experienced by us or any of our principal suppliers could cause significant harm to our business, financial condition and results of operations.

Manufacturing and assembly takes place in Queensbury, New York and Glens Falls, New York. If we were significantly affected by a disaster, we no longer have an option to transfer manufacturing to another facility so we would be forced to rely on third-party manufacturers or would have to delay production of our products.

Anti-takeover provisions in our organizational documents and Delaware law may discourage or prevent a change of control, even if an acquisition would be beneficial to our stockholders, which could cause our stock price to decline and prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and our amended and restated bylaws contain provisions that may enable our management to resist a change in control. These provisions may discourage, delay or prevent a change in the ownership of our Company or a change in our management. In addition, these provisions could limit the price that investors would be willing to pay in the future for shares of our common stock. Such provisions include:

- Our Board of Directors is authorized, without prior stockholder approval, to create and issue “blank check” preferred stock, with rights senior to those of our common stock;
- Our Board of Directors is classified so that not all members of our Board of Directors are elected at one time, which may make it more difficult for a person who acquires control of a majority of our outstanding voting stock to replace our directors;
- Advance notice is required for stockholders to nominate individuals to serve on our Board of Directors or for stockholders to submit proposals that can be acted upon at stockholder meetings;
- Stockholder action by written consent is prohibited; and
- Stockholders are not permitted to cumulatively vote for the election of directors.

We are also subject to the provisions of Section 203 of the Delaware General Corporation Law, which may prohibit certain business combinations with stockholders owning 15% or more of our outstanding voting stock.

These and other provisions in our amended and restated certificate of incorporation, amended and restated bylaws and Delaware law could make it more difficult for stockholders or potential acquirers to obtain control of our board of directors or initiate actions that are opposed by our then-current board of directors, including delaying or impeding a merger, tender offer or proxy contest involving our Company. Any delay or prevention of a change of control transaction or changes in our board of directors could cause the market price of our common stock to decline.

RISKS RELATED TO THE REGULATORY ENVIRONMENT

Reforms to the United States healthcare system may adversely affect our business.

In response to perceived increases in health care costs in recent years, there have been and continue to be proposals by the federal government, state governments, regulators and third-party payers to control these costs and, more generally, to reform the health care system, including U.S. health care reform legislation. Certain of these proposals could, among other things, limit the prices we are able to charge for our products or the amounts of reimbursement available for our products and could limit the acceptance and availability of our products. The adoption of some or all of these proposals could have an adverse effect on our business, results of operations, financial condition and cash flows.

Our industry is experiencing greater scrutiny and regulation by governmental authorities, which has led to certain costs and business distractions as we respond to inquiries and comply with new regulations, and may lead to greater governmental regulation in the future.

Our medical devices and our business activities are subject to rigorous regulation by the FDA and numerous other federal, state and foreign governmental authorities. These authorities and members of Congress have been increasing their scrutiny of our industry. In addition, certain states, including Massachusetts, have recently passed or are considering legislation restricting our interactions with health care providers and requiring disclosure of many payments to them. The federal government has recently introduced similar legislation, which may or may not preempt state laws. Recent Supreme Court case law has clarified that the FDA’s authority over medical devices preempts state tort laws, but legislation has been introduced at the federal level to allow state intervention, which could lead to increased and inconsistent regulation at the state level. We anticipate that the government will continue to scrutinize our industry closely, and that additional regulation by governmental authorities may increase compliance costs, exposure to litigation and other adverse effects to our operations.

We are subject to a comprehensive system of federal, state and international laws and regulations, and we could be the subject of investigations, enforcement actions or face lawsuits and monetary or equitable judgments.

We operate in many parts of the world, and our operations are affected by complex state, federal and international laws relating to healthcare, environmental protection, antitrust, anti-corruption, anti-bribery, fraud and abuse, export control, tax, employment and laws regarding privacy, personally identifiable information and protected health information, including, for example, the Food, Drug and Cosmetic Act (“FDCA”), various FDA and international regulations relating to, among other things, the development, quality assurance, manufacturing, importation, distribution, marketing and sale of, and billing for, our products, the federal Anti-Kickback Statute and Federal False Claims Act (Note 17), the U.S. Foreign Corrupt Practices Act (“FCPA”), the UK Bribery Act of 2010, the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), General Data Protection Regulation ("GDPR") and other foreign data protection and privacy laws, and laws and regulations relating to sanctions and money laundering. We are subject to periodic inspections to determine compliance with the FDA’s

Quality System Regulation requirements, current medical device adverse event reporting regulations, and similar foreign rules and regulations. Despite our training and compliance programs, our internal control policies and procedures may not always protect us from negligent, reckless or criminal acts committed by our employees or agents. The failure to comply with these laws and regulatory standards, allegations of such non-compliance or the discovery of previously unknown problems with a product or manufacturer: (i) could result in FDA Form-483 notices and/or warning letters or the foreign equivalent, fines, delays or suspensions of regulatory clearances, investigations, detainment, seizures or recalls of products (with the attendant expenses), the banning of a particular device, an order to replace or refund the cost of any device previously manufactured or distributed, operating restrictions and/or civil or criminal prosecution, and/or penalties, as well as decreased sales as a result of negative publicity and product liability claims; and (ii) could disrupt our business and could have a material adverse effect on our business, results of operations, financial condition and/or liquidity.

Most of our products must receive clearance or approval from the FDA or comparable regulatory agencies abroad before they can be marketed or sold. State, federal and foreign registration regulations are both evolving and subject to varied levels of interpretation and enforcement. It can be costly and time-consuming to obtain and maintain regulatory approvals to market a medical device. Approvals might not be granted on a timely basis, if at all, for new devices, new indications for use or certain modifications or enhancements to previously approved products. Even after a device receives regulatory approval it remains subject to significant regulatory and quality requirements, such as manufacturing, recordkeeping, renewal, recertification or reporting and other post market approval requirements, which may include clinical, laboratory or other studies. Product approvals by the FDA and other foreign regulators can be withdrawn due to failure to comply with regulatory standards or the occurrence of unforeseen problems following initial approval or may be re-classified to a higher regulatory classification, such as requiring a Pre-Market Approval ("PMA") for a previously cleared 510(k) device. Regulations are also subject to change as a result of legislative, administrative or judicial action, which may further increase our costs or reduce sales. Our failure to maintain approvals, obtain approval for new products or comply with other applicable regulatory requirements could adversely affect our business, results of operations, financial condition and/or liquidity.

The healthcare industry is under continued scrutiny from state, federal and international governments with respect to industry practices in the area of sales and marketing, including provisions of the Physician Payment Sunshine Act. If our marketing, sales or other activities fail to comply with the FDA's or other comparable foreign regulatory agencies' regulations or guidelines, or other applicable laws, we may be subject to warnings from the FDA or investigations or enforcement actions from the FDA, Medicare, the Office of Inspector General of the U.S. Department of Health and Human Services or other government agencies or enforcement bodies. Additionally, in the European Union, a new draft Medical Device Regulation was published in 2016 imposing stricter requirements for the marketing and sale of medical devices and grants Notified Bodies increased post-market surveillance authority. The Company is monitoring the implementation of the regulation and has undertaken initial actions to move toward compliance based on the published draft of the regulation. The Company's failure to comply with any marketing or sales regulations or any other applicable regulatory requirements could adversely affect our business, results of operations, financial condition and/or liquidity.

In the recent past, medical device manufacturers have been the subject of investigations from government agencies related to their relationships with doctors, product sales and marketing and off-label promotion of products, among other activities or practices. If an enforcement action involving the Company were to occur, it could result in penalties, fines, detainment, seizures, recalls, product bans, operating restrictions (which may include loss of a license or authorization), the exclusion of our products from reimbursement under government-funded programs and/or prohibitions on our ability to sell our products, and could have a material adverse effect on our business, results of operations, financial condition and/or liquidity. In addition, remediation of any issues identified by the FDA or other regulators could require facility upgrades, process changes, additional labeling requirements or other measures, any of which could have a material adverse effect on our business and/or results of operations.

In addition, lawsuits by or otherwise involving employees, customers, licensors, licensees, suppliers, vendors, business partners, distributors, shareholders or competitors with respect to how we conduct our business could be very costly and could substantially disrupt our business. Disputes from time-to-time with companies or individuals are not uncommon, and we cannot assure you that we will be able to resolve these disputes on terms favorable to us. The occurrence of an adverse monetary or equitable judgment or a large expenditure in connection with a settlement of any of these matters could have a material adverse effect on our business, results of operations, financial condition and/or liquidity.

We are subject to data privacy and protection regulations and laws globally, and could face substantial penalties if we fail to comply with such regulations and laws.

We are subject to a variety of laws and regulations globally regarding privacy, data protection, and data security, including those related to the collection, storage, handling, use, disclosure, transfer, and security of personal data, including

Europe’s General Data Protection Regulation (GDPR). These laws and regulations regarding the handling of personal data are broad in scope and are subject to evolving interpretation and can include significant penalties for non-compliance. We could be required to incur substantial costs to monitor compliance or to alter our practices.

Failure to comply with laws relating to the handling and transmission of electronic health data may require us to make significant changes to our products, or incur penalties or other liabilities.

State, federal and foreign laws, such as the federal Health Insurance Portability and Accountability Act of 1996 (“HIPAA”), regulate the confidentiality of personally identifiable health information and other sensitive personal information and the circumstances under which such information may be released. These measures may govern the disclosure and use of personal and patient medical record information and may require users of such information to implement specified technical, administrative and security measures, and to notify individuals in the event of privacy and security breaches. Evolving laws and regulations in this area could require us to incur significant additional costs to re-design our products or systems and procedures which could have an adverse impact on our results of operations. Failure to maintain the confidentiality of sensitive personal information in accordance with the applicable regulatory requirements, or to abide by electronic health data transmission standards, could expose us to breach of contract claims, fines and penalties, costs for remediation and harm to our reputation.

We are subject to healthcare fraud and abuse regulations that could result in significant liability, require us to change our business practices and restrict our operations in the future.

We are subject to various federal, state and local laws targeting fraud and abuse in the healthcare industry, including anti-kickback and false claims laws. Violations of these laws are punishable by criminal or civil sanctions, including substantial fines, imprisonment and exclusion from participation in healthcare programs such as Medicare and Medicaid and health programs outside the United States. These laws and regulations are wide ranging and subject to changing interpretation and application, which could restrict our sales or marketing practices. Furthermore, since many of our customers rely on reimbursement from Medicare, Medicaid and other governmental programs to cover a substantial portion of their expenditures, our exclusion from such programs as a result of a violation of these laws could have a material adverse effect on our business, results of operations, financial condition and cash flow.

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

After a device is placed on the market, numerous regulatory requirements apply. We are subject to inspection and marketing surveillance by the FDA to determine our compliance with all regulatory requirements. Our failure to comply with applicable regulatory requirements could result in the FDA or a court instituting a wide variety of enforcement actions against us, including a public "Warning Letter"; an order to shut down some or all manufacturing operations; a recall of products; fines or civil penalties; seizure or detention of our products; refusing our requests for 510(k) clearance or a PMA of new or modified products; withdrawing 510(k) clearance or PMA approvals already granted to us; and criminal prosecution.

Our manufacturing processes and those of some of our suppliers must comply with the FDA’s Quality System Regulation, or QSR, 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. The FDA enforces the QSR through unannounced inspections. If we, or one of our suppliers, fail a QSR 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, 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, the FDA’s adverse event reporting requirements and the FDA’s reporting requirements for field correction or product removals. The FDA has recently placed increased emphasis on its scrutiny of compliance with the QSR and these other postmarket requirements.

If we, or one of our suppliers, violate the FDA’s requirements or fail to take adequate corrective action in response to any significant compliance issue raised by the FDA, the FDA can take various enforcement actions which could cause our product sales and profitability to suffer.

In addition, most other countries require us and our suppliers 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, or our suppliers, should fail to do so, we would lose our ability to market and sell our products in those countries.

If we cannot obtain and maintain marketing clearance or approval from governmental agencies, we will not be able to sell our products.

Our products are medical devices that are subject to extensive regulation in the United States and in the foreign countries in which they are sold. Unless an exemption applies, each medical device that we wish to market in the United States must receive either 510(k) clearance or premarket approval (PMA) from the FDA before the product can be sold. Either process can be lengthy and expensive. The FDA's 510(k) clearance procedure, also known as "premarket notification," is the process we have used for our current products. This process usually takes from four to twelve months from the date the premarket notification is submitted to the FDA, but may take significantly longer. Although we have obtained 510(k) clearances for our current products, our clearances may be revoked by the FDA if safety or effectiveness problems develop with the devices. The PMA process is much more costly, lengthy and uncertain. It generally takes from one to three years from the date the application is submitted to, and filed with the FDA, and may take even longer. Regulatory regimes in other countries similarly require approval or clearance prior to our marketing or selling products in those countries. We rely on our distributors to obtain regulatory clearances or approvals of our products outside of the United States. If we are unable to obtain additional clearances or approvals needed to market existing or new products in the United States or elsewhere or obtain these clearances or approvals in a timely fashion or at all, or if our existing clearances are revoked, our revenues and profitability may decline.

Modifications to our current products may require new marketing clearances or approvals or require us to cease marketing or recall the modified products until such clearances or approvals are obtained.

Any modification to an FDA-cleared medical device that could significantly affect its safety or effectiveness, or that would constitute a major change or modification in its intended use, requires a new FDA 510(k) clearance or, possibly, a premarket approval. The FDA requires every manufacturer to make its own determination as to whether a modification requires a new 510(k) clearance or premarket approval, but the FDA may review and disagree with any decision reached by the manufacturer. We have modified aspects of some of our devices since receiving regulatory clearance. We believed that some of these modifications did not require new 510(k) clearance or premarket approval and, therefore, we did not seek new 510(k) clearances or premarket approvals. In the future, we may make additional modifications to our products after they have received FDA clearance or approval and, in appropriate circumstances, determine that new clearance or approval is unnecessary. Regulations in other countries in which we market or sell, or propose to market or sell, may also require that we make judgments about changes to our products and whether or not those changes are such that regulatory approval or clearance should be obtained. In the United States and elsewhere, regulatory authorities may disagree with our past or future decisions not to seek new clearance or approval and may require us to obtain clearance or approval for modifications to our products. If that were to occur for a previously cleared or approved product, we may be required to cease marketing or recall the modified device until we obtain the necessary clearance or approval. Under these circumstances, we may also be subject to significant regulatory fines or other penalties. If any of the foregoing were to occur, our financial condition and results of operations could be negatively impacted.

Even after receiving regulatory clearance or approval, our products may be subject to product recalls, which may harm our reputation and divert managerial and financial resources.

The FDA and similar governmental authorities in other countries have the authority to order mandatory recall of our products or order their removal from the market if there are material deficiencies or defects in design, manufacture, installation, servicing or labeling of the device, or if the governmental entity finds that our products would cause serious adverse health consequences. A government mandated voluntary recall or field action by us could occur as a result of component failures, manufacturing errors or design defects, including labeling defects. Any recall of our products may harm our reputation with customers and divert managerial and financial resources.

We may be subject to fines, penalties, injunctions or costly investigations if we are determined to be promoting the use of our products for unapproved or "off-label" uses.

If we are incorrect in our belief that our promotional materials and training methods regarding physicians are conducted in compliance with regulations of the FDA and other applicable regulations, and the FDA determines that our promotional materials or training constitutes promotion of an unapproved use, the FDA could request that we modify our training or promotional materials or subject us to regulatory enforcement actions, including the issuance of a warning letter, injunction, seizure, civil fine and criminal penalties. It is also possible that other federal, state or foreign enforcement authorities might take action if they consider promotional or training materials to constitute promotion of an unapproved use, which could result in significant fines or penalties under other statutory authorities, such as laws prohibiting false claims for reimbursement. Any of these results could have a material adverse effect on our financial position or results of operations.

If our employees or agents violate the U.S. Foreign Corrupt Practices Act or anti-bribery laws in other jurisdictions, we may incur fines or penalties, or experience other adverse consequences.

We are subject to the U.S. Foreign Corrupt Practices Act, or FCPA, and similar anti-bribery laws in international jurisdictions, including the UK Anti-Bribery Act, which generally prohibit companies and their intermediaries from making improper payments to non-U.S. officials for the purpose of obtaining or retaining business. Because of the predominance of government-sponsored healthcare systems around the world, many of our customer relationships outside of the United States are with governmental entities and are therefore subject to such anti-bribery laws. Our sales to customers and distributors outside of the United States have been increasing and we expect them to continue to increase in the future. If our employees or agents violate the provisions of the FCPA or other anti-bribery laws, we may incur fines or penalties, we may be unable to market our products in other countries or we may experience other adverse consequences which could have a material adverse effect on our operating results or financial condition.

Laws and regulations governing the export of our products could adversely impact our business. If the U.S. government imposes strict sanctions on Iran, our revenue could be impacted.

The U.S. Department of the Treasury's Office of Foreign Assets Control (OFAC), and the Bureau of Industry and Security at the U.S. Department of Commerce (BIS), administer certain laws and regulations that restrict U.S. persons and, in some instances, non-U.S. persons, in conducting activities, transacting business with or making investments in certain countries, governments, entities and individuals subject to U.S. economic sanctions. Due to our international operations, we are subject to such laws and regulations, which are complex, restrict our business dealings with certain countries and individuals, and are constantly changing. Further restrictions may be enacted, amended, enforced or interpreted in a manner that materially impacts our operations.

In fiscal year 2019 we generated $1.6 million of revenue for sales to distributors doing business in Iran. We continuously review our ability to sell products to distributors that conduct business in Iran in accordance with all applicable U.S. laws. If laws, rules or regulations of the United States with respect to doing business in, or with parties that do business in, Iran change to restrict our ability to generate revenue in Iran, our revenue could decline, impacting our results of operations.

From time to time, we have limited business dealings in countries subject to comprehensive sanctions. These business dealings may expose us to a heightened risk of violating applicable sanctions regulations. Violations of these regulations are punishable by civil penalties, including fines, denial of export privileges, injunctions, asset seizures, debarment from government contracts and revocations or restrictions of licenses, as well as criminal fines and imprisonment. We have established policies and procedures designed to assist with our compliance with such laws and regulations. However, there can be no assurance that our policies and procedures will effectively prevent us from violating these regulations in every transaction in which we may engage, and such a violation could adversely affect our reputation, business, financial condition, results of operations and cash flows.

Changes in reimbursement levels by governmental or other third-party payors for procedures using our products may cause our revenues to decline.

Our products 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 medical device companies 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 other countries may limit, reduce or eliminate reimbursement for our products and adversely affect both our pricing flexibility and the demand for our products. Even when we develop a promising new product, we may find limited demand for the product unless reimbursement approval is obtained from private and governmental third party payors.

Third-party payors have adopted, and are continuing to adopt, a number of healthcare policies intended to curb rising healthcare costs. These policies include:

- controls on government-funded reimbursement for healthcare services and price controls on medical products and services providers;
- challenges to the pricing of medical procedures or limits or prohibitions on reimbursement for specific devices and therapies through other means; and

- the introduction of managed care systems in which healthcare providers contract to provide comprehensive healthcare for a fixed cost per person.

We are unable to predict whether federal, state or local healthcare reform legislation or regulation affecting our business may be proposed or enacted in the future, or what effect any such legislation or regulation would have on our business. Changes in healthcare systems in the United States or elsewhere in a manner that significantly reduces reimbursement for procedures using our medical devices or denies coverage for these procedures, or adverse decisions relating to our products by administrators of these systems in coverage or reimbursement issues, would have an adverse impact on the acceptance of our products and the prices which our customers are willing to pay for them.

RISKS RELATED TO INTELLECTUAL PROPERTY

If we fail to adequately protect our intellectual property rights, we may not be able to generate revenues from new or existing products and our business may suffer.

Our success depends in part on obtaining, maintaining and enforcing our patents, trademarks and other proprietary rights, and our ability to avoid infringing 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. However, no assurances can be made that any pending or future patent applications will result in the issuance of patents, that any current or future patents issued to, or licensed by, us will not be challenged or circumvented by our competitors, or that our patents will not be found invalid.

Patent positions of medical device companies, including our Company, are uncertain and involve complex and evolving legal and factual questions. The coverage sought in a patent application can be denied or significantly reduced either before or after the patent is issued. Consequently, there can be no assurance that any of our pending patent applications will result in an issued patent. There is also no assurance that any existing or future patent will provide significant protection or commercial advantage, or whether any existing or future patent will be circumvented by a more basic patent, thus requiring us to obtain a license to produce and sell the product. Generally, patent applications can be maintained in secrecy for at least 18 months after their earliest priority date. In addition, publication of discoveries in the scientific or patent literature often lags behind actual discoveries. Therefore, we cannot be certain that we were the first to invent the subject matter covered by each of our pending U.S. patent applications or that we were the first to file non-U.S. patent applications for such subject matter.

Additionally, we rely on trade secret protection for certain unpatented aspects of our proprietary technology. There can be no assurance that others will not independently develop or otherwise acquire substantially equivalent proprietary information or techniques, that others will not 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 key 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.

If we are not able to adequately protect our intellectual property, our market share, financial condition and results of operations may suffer.

If third parties claim that our products infringe their intellectual property rights, we may be forced to expend significant financial resources and management time defending against such actions and our financial condition and our results of operations could suffer.

Third parties may claim that our products infringe their patents and other intellectual property rights. Identifying third-party patent rights can be particularly difficult because, in general, patent applications can be maintained in secrecy for at least 18 months after their earliest priority date. Some companies in the medical device industry have used intellectual property infringement litigation to gain a competitive advantage. If a competitor were to challenge our patents, licenses or other intellectual property rights, or assert that our products infringe its patent or other intellectual property rights, we could incur substantial litigation costs, be forced to make expensive changes to our product design, pay royalties or other fees to license rights in order to continue manufacturing and selling our products, or pay substantial damages. Third-party infringement claims, regardless of their outcome, would not only consume our financial resources but also divert our management’s time and effort. Such claims could also cause our customers or potential customers to purchase competitors' products or defer or limit their purchase or use of our affected products until resolution of the claim. See Note 17 in the consolidated financial statements.

RISKS RELATED TO OUR STOCK PRICE

Our future operating results are difficult to predict and may vary significantly from quarter to quarter, which may adversely affect the price of our common stock.

The ongoing introduction of new products and services that affect our overall product mix make the prediction of future operating results difficult. You should not rely on our past results as any indication of future operating results. The price of our common stock will likely fall in the event that our operating results do not meet the expectations of analysts and investors. Comparisons of our quarterly operating results are an unreliable indication of our future performance because they are likely to vary significantly based on many factors, including:

- the level of sales of our products and services in our markets;
- our ability to introduce new products or services and enhancements in a timely manner;
- the demand for and acceptance of our products and services;
- the success of our competition and the introduction of alternative products or services;
- our ability to command favorable pricing for our products and services;
- the growth of the market for our devices and services;
- the expansion and rate of success of our direct sales force in the United States and internationally and our independent distributors internationally;
- actions relating to ongoing FDA compliance;
- our ability to integrate acquired assets or companies;
- our ability to timely divest of assets that are covered by Transition Service Agreements;
- the effect of intellectual property disputes;
- the size and timing of orders from independent distributors or customers;
- the attraction and retention of key personnel, particularly in sales and marketing, regulatory, manufacturing and research and development;
- unanticipated delays or an inability to control costs;
- general economic conditions as well as those specific to our customers and markets; and
- seasonal fluctuations in revenue due to the elective nature of some procedures.

Our stock price may be volatile, which may cause the value of our stock to decline or subject us to a securities class action litigation.

The trading price of our common stock price may be volatile and could be subject to wide fluctuations in price in response to various factors, many of which are beyond our control, including:

- general economic, industry and market conditions;
- actions by institutional or other large stockholders;
- the depth and liquidity of the market for our common stock;
- volume and timing of orders for our products;
- developments generally affecting medical device companies;
- the announcement of new products or product enhancements by us or our competitors;
- changes in earnings estimates or recommendations by securities analysts;
- investor perceptions of us and our business, including changes in market valuations of medical device companies; and
- our results of operations and financial performance.

In addition, the stock market in general, and the NASDAQ Stock Market and the market for medical devices in particular, have experienced substantial price and volume volatility that is often seemingly unrelated to the operating performance of particular companies. These broad market fluctuations may cause the trading price of our common stock to decline. In the past, securities class action litigation has often been brought against a company after a period of volatility in the market price of its common stock. We may become involved in this type of litigation in the future. Any securities litigation claims brought against us could result in substantial expense and the diversion of management's attention from our business.

Item 1B. ***Unresolved Staff Comments.***

None.

Item 2. ***Properties.***

During the year ended May 31, 2019, we operated in the following locations:

Location	Purpose	Approx. Sq. Ft.	Property Type
Latham, NY	Corporate headquarters	55,000	Leased
Glens Falls, NY	Manufacturing	189,000	Owned
Queensbury, NY	Manufacturing and distribution	129,000	Owned
Marlborough, MA	Research & Development	31,000	Leased
Amsterdam, NL	Selling, Marketing & Administrative	8,100	Leased
Houston, TX	Selling, Marketing & Distribution	4,000	Leased

In addition, we lease sales offices in various other jurisdictions.

As a result of the Fluid Management divestiture, we now own approximately 20,300 square feet of the Glens Falls facility.

Item 3. ***Legal Proceedings.***

The Company is involved in various legal proceedings, including commercial, intellectual property, product liability, and regulatory matters of a nature considered normal for its business. The Company accrues for amounts related to these matters if it is probable that a liability has been incurred, and an amount can be reasonably estimated. The Company discloses such matters when there is at least a reasonable possibility that a material loss may have been incurred. However, the Company cannot predict the outcome of any litigation or the potential for future litigation.

C.R. Bard, Inc. v. AngioDynamics, Inc.

On January 11, 2012, C.R. Bard, Inc. (“Bard”) filed a suit in the United States District Court of Utah claiming certain of our implantable port products infringe on three U.S. patents held by Bard (the “Utah Action”). Bard’s Complaint sought unspecified damages and other relief. We filed petitions for reexamination in the U.S. Patent and Trademark Office (“USPTO”) seeking to invalidate all three patents asserted by Bard in the litigation. Our petitions were granted and 40 of Bard's 51 patent claims were rejected and, following further proceedings, the Patent Office issued a Final Rejection of all 40 claims subject to reexamination. Thereafter, Bard filed appeals to the USPTO Board of Appeals and Interferences for all three reexaminations. The Patent Office issued decisions in all three appeals. In one (issued on March 11, 2016 for U.S. Patent No. 7,785,302), the rejections of six of the ten claims under reexamination were affirmed, but were reversed on four of the ten claims. In the second (issued on March 24, 2016 for U.S. Patent No. 7,959,615), the rejections of eight of the ten claims under reexamination were affirmed but the rejections of the other two of the ten claims were reversed. In the third (issued on March 29 for U.S. Patent No. 7,947,022) the rejections of all twenty claims under reexamination were affirmed. Thereafter, Bard filed Requests for Rehearing in all three reexamination appeals and the Company filed Requests for Rehearing in two of the reexamination appeals (the ‘302 and ‘615 patent reexaminations). The PTO denied all three Rehearing Requests - - on February 1, 2017 for the ‘302 reexam; on February 17, 2017 for the ‘022 reexam; and on February 21, 2017 for the ‘615 reexam, but modified its characterization of one prior art reference for the ‘302 and ‘022 decisions. Bard filed a Notice of Appeal to the Federal Circuit Court of Appeals in all three reexams and the Company filed Cross-Appeals for the ‘302 and the ‘615 reexams. The parties have completed the process of filing the various appellate briefs. Medcomp also filed an Amicus Brief in support of the Company on November 22, 2017. An oral hearing was held on September 5, 2018 and the court rendered its decision on September 28, 2018, affirming that claims 1-5 and 10 of the ‘615 patent were invalid but that claims 6-7 of the 615 patent and claims 1-4 of the 302 patent were valid over the asserted prior art references. The Federal Circuit also reversed the PTAB’s claim construction ruling and remanded for consideration of obviousness for the remaining claims under the new claim construction ruling and for further findings with respect to whether one of the asserted references qualified as a printed publication. On January 28, 2019, on remand, the USPTO reversed the rejections of the ‘302 claims 1-10, ‘022 claims 1-20 and ‘615 claims 6-9. The USPTO has since issued Inter Partes Reexamination Certificates for the ‘302 Patent (confirming validity of claims 1-10) on June 10, 2019, and for the ‘022 patent (confirming validity of claims 1-20) on July 2, 2019. A Certificate has not yet been issued for ‘615. Meanwhile, the Utah action remains stayed; and, on July 12, 2017, Bard assigned the asserted patents to Bard Peripheral Vascular, Inc. (“BPV”) which was added as Co-Appellant before the Federal Circuit and as a co-Plaintiff in the Utah action. The Company believes these claims are without merit and intends to defend them vigorously. The Company has not recorded an expense related to the outcome of this litigation because it is not yet possible to determine if a potential loss is probable nor reasonably estimable.

On March 10, 2015, C.R. Bard, Inc. ("Bard") and Bard Peripheral Vascular, Inc. (“BPV”) filed suit in the United States District Court for the District of Delaware (the “Delaware Action") claiming certain of the Company's implantable port products infringe on three other U.S. patents held by Bard, which are different from those asserted in the Utah action. Bard's complaint seeks unspecified damages and other relief. On June 1, 2015, the Company filed two motions in response to Bard’s Complaint - one sought transfer to the District of Utah where the Utah Action is currently pending, and the other sought dismissal of the entire complaint on grounds that none of the claims in the asserted patents is directed to patent eligible subject matter under Section 101 of the Patent Statute and in light of recent authority from the U. S. Supreme Court. On January 12, 2016, the Court issued a decision denying both motions. A Markman hearing was held on March 10, 2017 and the Court issued its Claim Construction Order on May 19, 2017. On May 19, 2017, Bard served its Final Infringement Contentions and on June 2, 2017, the Company served its Final Invalidity Contentions. On October 20, 2017, the scheduling order for the case was amended to, among other things, set a trial date commencing July 23, 2018. The parties completed Expert Discovery in January 2018 and completed briefing on their respective case dispositive motions on April 27, 2018. On June 26, 2018, the Court denied all case dispositive motions, ruling that issues of material fact remained in dispute. On July 9, 2018, the Court continued the trial until March 2019. On January 9, 2019 the court held a further claim construction hearing to resolve two outstanding claim construction issues prior to trial. A Report and Recommendation was issued on February 11, 2019 and entered by the Court on February 28, 2019. Jury selection was held on Friday March 1, 2019 and trial began on March 4, 2019. On day four of the jury trial, at the close of C.R. Bard’s case (Plaintiff), Judge Bataillon granted judgment as a matter of law (JMOL) under rule 50(a) in favor of AngioDynamics, dismissing Bard's suit. On April 5, 2019, Bard filed a precautionary Notice of Appeal to the Federal Circuit. On April 26, 2019, the District Court issued a Memorandum and Order confirming the grant of judgment in the Company's favor of patent ineligibility, non-infringement, patent invalidity and no willful infringement. Meanwhile, on May 10, 2019, the Company filed a Motion for Attorney fees and non-taxable expenses under 35 USC Sec. 285. On May 21, 2019, the Court issued a Memorandum and Order which, inter alia, stayed proceedings on the Company's fee Motion and the Company's equitable claims pending appeal; and entered Final Judgment on May 21, 2019 as well. Bard filed a second Notice of Appeal on May 23, 2019. Both appeals have since been consolidated and Bard's opening brief is currently due on July 29, 2019. We maintain our belief that Bard's claims are without merit. The Company has not recorded an expense related to the outcome of this litigation because it is not yet possible to determine if a potential loss is probable nor reasonably estimable.

AngioDynamics, Inc. v. C.R. Bard, Inc.

On May 30, 2017, the Company commenced an action in the United States District Court for the Northern District of New York entitled AngioDynamics, Inc. v. C.R. Bard, Inc. and Bard Access Systems, Inc. ("Bard"). In this action, the Company alleges that Bard has illegally tied the sales of its tip location systems to the sales of its PICCs. The Company alleges that this practice violates the federal antitrust laws and has had, and continues to have, an anti-competitive effect in the market for PICCs. The Company seeks both monetary damages and injunctive relief. Bard moved to dismiss on September 8, 2017. On August 6, 2018 the court denied Bard's motion in its entirety. The parties are currently engaged in discovery, which is set to close in January 2020.

Merz North America Settlement

On May 16, 2019, Merz North America, Inc. ("Merz") commenced an action in the United States District Court for the Southern District of New York entitled Merz North America, Inc. v. AngioDynamics, Inc. In this action, Merz alleged breach of contract against AngioDynamics based on a March 1, 2016 Distribution Agreement. On June 28, 2019, AngioDynamics reached a settlement with Merz in which AngioDynamics agreed to make a lump-sum payment to Merz in return for dismissal of the case with prejudice. Merz filed a stipulation of dismissal with the Court on July 23, 2019.

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.***

Our common stock is traded on the Global Select Market tier of the NASDAQ Stock Market LLC (formerly the Nasdaq National Market), under the symbol "ANGO."

The following table sets forth, for the fiscal quarters indicated, the high and low sale prices for our common stock as reported by the NASDAQ Stock Market.

	Sale Price	
	High	Low
Year ended May 31, 2019		
Fourth Quarter	$ 25.01	$ 18.79
Third Quarter	$ 23.46	$ 18.90
Second Quarter	$ 24.23	$ 19.84
First Quarter	$ 23.65	$ 18.95

	Sale Price	
	High	Low
Year ended May 31, 2018		
Fourth Quarter	$ 21.04	$ 16.13
Third Quarter	$ 17.70	$ 15.71
Second Quarter	$ 18.76	$ 16.29
First Quarter	$ 17.12	$ 15.12

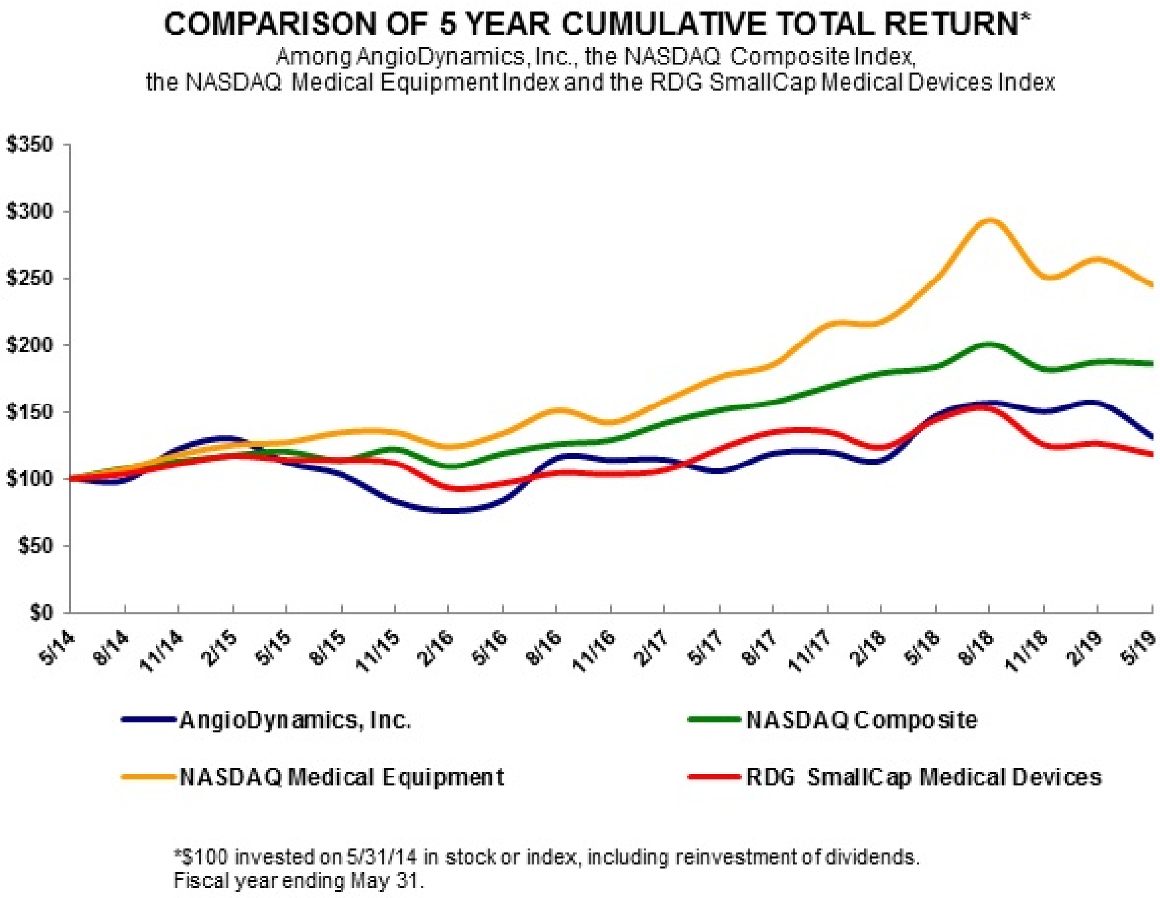
As of July 22, 2019, there were 180 holders of record of our common stock.

Dividends

We did not declare any cash dividends on our common stock during our last three fiscal years. We do not anticipate paying any cash dividends on our common stock for the foreseeable future.

Performance Graph

The graph below matches AngioDynamics, Inc.'s cumulative 5-year total shareholder return on common stock with the cumulative total returns of the NASDAQ Composite index, the RDG SmallCap Medical Devices index, and the NASDAQ Medical Equipment index. The graph tracks the performance of a $100 investment in our common stock and in each index (with the reinvestment of all dividends) from May 31, 2014 to May 31, 2019. The stock price performance included in this graph is not necessarily indicative of future stock price performance.



Item 6. ***Selected Financial Data.***

The following selected financial data should be read in conjunction with our consolidated financial statements and the related notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included elsewhere in this Annual Report on Form 10-K.

On May 31, 2019, the Company completed the sale of the Fluid Management business and all of the assets used primarily in connection with the Fluid Management business (Note 3). As the disposal of this business represents a strategic shift with a major effect on the Company's operations, for all periods presented in our Consolidated Statements of Operations and Comprehensive Income, all sales, costs, expenses, gains and income taxes attributable to Fluid Management have been reported under the captions, "Income from Discontinued Operations, Net of Income Tax." The consolidated statements of operations data for the fiscal years ended May 31, 2019, May 31, 2018, and May 31, 2017, and the consolidated balance sheet data as of May 31, 2019 and May 31, 2018, are derived from the consolidated financial statements that are included elsewhere in this Annual Report on Form 10-K. The consolidated statements of operations data for the fiscal years ended May 31, 2016 and May 31, 2015, and the consolidated balance sheet data as of May 31, 2017, May 31, 2016 and May 31, 2015, are derived from our audited consolidated financial statements not included in this Annual Report on Form 10-K. Historical results are not necessarily indicative of the results of operations to be expected for future periods. See Note 16 of "Notes to Consolidated Financial Statements" for a description of the method that we used to compute our historical basic and diluted net income per share attributable to common stockholders.

	Year ended May 31,				
(in thousands, except per share information)	2019	2018	2017	2016	2015
Consolidated Statements of Operations Data:					
Net sales	$ 270,634	$ 261,655	$ 269,788	$ 271,014	$ 271,795
Gross profit (exclusive of intangible amortization)	156,000	143,856	143,950	141,719	142,773
Operating expenses					
Research and development	28,258	24,338	24,148	23,932	25,473
Sales and marketing	76,829	73,109	74,865	79,789	78,397
General and administrative	34,902	30,991	31,133	30,314	29,769
Amortization of intangibles	17,056	13,906	14,567	15,235	16,624
Change in fair value of contingent consideration	(6,776)	250	(15,261)	948	(8,096)
Acquisition, restructuring and other items, net (1)	15,127	15,432	27,510	12,591	18,043
Medical device excise tax	—	—	(1,837)	2,416	4,142
Total operating expenses	165,396	158,026	155,125	165,225	164,352
Operating loss	(9,396)	(14,170)	(11,175)	(23,506)	(21,579)
Total other expenses, net	(5,306)	(3,093)	(3,120)	(4,271)	(4,682)
Net loss from continuing operations	(11,146)	(6,227)	(7,052)	(55,895)	(14,991)
Net income from discontinued operations	72,486	22,562	12,060	12,305	11,603
Net income (loss)	$ 61,340	$ 16,335	$ 5,008	$ (43,590)	$ (3,388)
Loss per share from continuing operations					
Basic	$ (0.30)	$ (0.17)	$ (0.19)	$ (1.55)	$ (0.42)
Diluted	$ (0.30)	$ (0.17)	$ (0.19)	$ (1.55)	$ (0.42)
Earnings per share from discontinued operations					
Basic	$ 1.93	$ 0.61	$ 0.33	$ 0.34	$ 0.33
Diluted	$ 1.93	$ 0.61	$ 0.33	$ 0.34	$ 0.33
Earnings (loss) per share from net income					
Basic	$ 1.64	$ 0.44	$ 0.14	$ (1.21)	$ (0.09)
Diluted	$ 1.64	$ 0.44	$ 0.14	$ (1.21)	$ (0.09)

(1) Acquisition, restructuring and one-time items include restructuring expenses or expenses incurred as part of M&A, product discontinuance, legal settlements and legal costs that are related to litigation that is not in the ordinary course of business.

	As of May 31,				
(in thousands)	2019	2018	2017	2016	2015
Consolidated Balance Sheet Data:					
Cash, cash equivalents and marketable securities	$ 227,641	$ 75,413	$ 48,759	$ 33,986	$ 20,080
Total assets	836,438	705,472	707,961	726,194	773,058
Long-term debt, including current portion	131,907	91,621	96,320	120,541	137,660
Contingent consideration, including current portion	13,486	3,261	12,761	38,275	47,384
Total long-term liabilities	148,321	105,576	121,418	152,239	167,444
Total stockholders' equity	614,815	542,595	515,027	507,228	545,099

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

The following information should be read together with the audited consolidated financial statements and the notes thereto and other information included elsewhere in this annual report on Form 10-K.

For all periods presented in Management's Discussion and Analysis of Financial Conditions and Results of Operations, all sales, cost of sales, expenses, gains and income taxes are exclusive of Fluid Management.

Forward-Looking Statements

This Annual Report on Form 10-K, including the sections entitled "Management's Discussion and Analysis of Financial Condition and Results of Operations", contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. All statements regarding AngioDynamics' expected future financial position, results of operations, cash flows, business strategy, budgets, projected costs, capital expenditures, products, competitive positions, growth opportunities, acquisitions, plans and objectives of management for future operations, as well as statements that include the words such as "expects," "reaffirms," "intends," "anticipates," "plans," "believes," "seeks," "estimates," or variations of such words and similar expressions, are forward-looking statements. These forward looking statements are not guarantees of future performance and are subject to risks and uncertainties. Investors are cautioned that actual events or results may differ from our expectations. Factors that may affect the actual results include, without limitation, our ability to develop our existing and new products, future actions by the FDA or other regulatory agencies, results of pending or future clinical trials, the results of ongoing litigation, overall economic conditions, general market conditions, market acceptance, foreign currency exchange rate fluctuations, the effects on pricing from group purchasing organizations and competition, the loss of any of our key customers or reduction in the purchase of our products by any such customers, and our ability to integrate acquired businesses as well as the risk factors listed in Part I, Item 1A of this Annual Report on Form 10-K.

Although we believe that the assumptions underlying the forward-looking statements contained herein are reasonable, any of the assumptions could be inaccurate and, therefore, there can be no assurance that the forward-looking statements included in this Annual Report on Form 10-K will prove to be accurate. In light of the significant uncertainties inherent in the forward-looking statements included herein, the inclusion of such information should not be regarded as a representation by us or any other person that our objectives and plans will be achieved. Any forward-looking statements are made pursuant to the Private Securities Litigation Reform Act of 1995 and, as such, speak only as of the date made. We disclaim any obligation to update the forward-looking statements. Investors are cautioned not to place undue reliance on these forward-looking statements which speak only as of the date stated, or if no date is stated, as of the date of this document.

EXECUTIVE OVERVIEW

Company and Market

We design, manufacture and sell a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for vascular access, for the treatment of peripheral vascular disease and for use in oncology and surgical settings. Our devices are generally used in minimally invasive, image-guided procedures. Most of our products are intended to be used once and then discarded, or they may be implanted for short or long term use.

Our business operations cross a variety of markets. Our financial performance is impacted by changing market dynamics, which have included an emergence of value-based purchasing by healthcare providers, consolidation of healthcare providers, the increased role of the consumer in health care decision-making and an aging population, among others. In addition, our growth is impacted by changes within our sector, such as the merging of competitors to gain scale and influence; changes in the regulatory environment for medical device; and fluctuations in the global economy.

Our sales and profitability growth also depends, in part, on the introduction of new and innovative products, together with ongoing enhancements to our existing products. Expansions to our product offerings are created through internal product development, technology licensing and strategic alliances. We recognize the importance of, and intend to continue to make investments in research and development activities and business development opportunities and feel confident that our existing capital structure and free cash flow generation will allow us to properly fund those activities.

On August 14, 2018, the Company acquired the BioSentry Tract Sealant System (BioSentry) technology from Surgical Specialties, LLC, a medical device company headquartered in Westwood, Massachusetts for a total purchase price of $39.8 million of which $37.0 million was paid on August 14, 2018 and $2.8 million was recorded as contingent consideration. The contingent consideration liability was recorded at fair value and was paid upon fulfillment of hydrogel orders during the fourth quarter of fiscal year 2019. This is part of the Company’s strategic focus on building a continuum of care within the oncology space. Refer to Note 2 for further disclosure on the acquisition.

On September 21, 2018, the Company acquired RadiaDyne, a privately held medical diagnostic and device company that designs and develops patient dose monitoring technology to improve cancer treatment outcomes. The aggregate purchase price of $75.0 million included an upfront payment of $47.9 million, contingent consideration with an estimated fair value of $22.3 million, an indemnification holdback of $4.6 million and a purchase price holdback of $0.2 million. The fair value of contingent consideration of $22.3 million is comprised of $16.5 million for the revenue milestones and $5.8 million for the technical milestones. The $4.6 million indemnification holdback is recorded in accrued liabilities as of May 31, 2019 and the $0.2 million purchase price holdback was initially recorded in accrued liabilities, but was paid during the third quarter of fiscal year 2019. This acquisition expands the Company’s growing Oncology business by adding RadiaDyne’s early-stage, proprietary OARtrac® real-time radiation dose monitoring platform and other market-leading oncology solutions, including the IsoLoc®/ImmobiLoc® and Alatus® balloon stabilizing technologies.

On March 7, 2019, the United States District Court for the District of Delaware granted judgment as a matter of law under rule 50(a) in favor of the Company. This judgment dismissed Bard's suit claiming certain of the Company's implantable port products infringe on three U.S. patents held by Bard. See Note 17 for additional disclosure.

On March 14, 2019, the Company entered into a settlement agreement with Biolitec, Inc. related to the action commenced in the United States District Court for the Northern District of New York in January 2008. The Company sought judgment against Biolitec for defense and indemnification in two lawsuits which were previously settled. As a result of the settlement, Biolitec paid the Company $3.4 million.

On May 31, 2019, the Company completed the sale of the NAMIC Fluid Management business (the “Divestiture”) and all of the assets used primarily in connection with the Fluid Management business to Medline Industries, Inc. (“Medline”) pursuant to an asset purchase agreement dated April 17, 2019 (the “Asset Purchase Agreement”). Total consideration received by the Company for the Divestiture in the fourth quarter of fiscal year 2019 was $169.2 million in cash and resulted in a gain of $46.6 million after working capital adjustments of $0.6 million. The gain is recorded in discontinued operations. A portion of the net proceeds were used on June 3, 2019 to retire the outstanding balance on the Term Loan and Revolving Facility and the remaining net proceeds will continue to be invested in the business.

In evaluating the operating performance of our business, management focuses on revenue, gross margin, operating income, earnings per share and cash flow from operations. A summary of these key financial metrics for the year ended May 31, 2019 compared to the year ended May 31, 2018 follows:

Year ended May 31, 2019:

- Revenue increased by 3.4% to $270.6 million
- Gross margin as a percentage of sales increased by 260 bps to 57.6%
- Operating loss decreased by $4.8 million to $9.4 million
- Cash flow from operations decreased by $3.8 million to $37.4 million

Strategic Initiatives to Drive Growth

Throughout the year, we introduced strategic moves designed to streamline our business, improve our overall business operations and position ourselves for growth. Those initiatives included:

- *Product development process.* The Company continued its robust product development process which is intended to improve the Company’s ability to bring new products to market.
- *Value Creation.* To create value and drive future growth, the Company plans to practice dispassionate portfolio optimization and continue to focus on areas of compelling unmet needs including those that are patient-centric and evidenced-based. This was evident through the BioSentry and RadiaDyne acquisitions noted above along with the divestiture of the Fluid Management business. In addition, the Company is pursuing targeted global expansion opportunities.

Critical Accounting Policies and Use of Estimates

Our significant accounting policies are summarized in Note 1 to Notes to Consolidated Financial Statements included elsewhere in this Annual Report on Form 10-K. While all these significant accounting policies affect the reporting of our financial condition and results of operations, we view certain of these policies as critical. Policies determined to be critical are those policies that have the most significant impact on our financial statements and require us to use a greater degree of judgment and/or estimates. Actual results may differ from those estimates. The accounting policies identified as critical are as follows:

Revenue Recognition

The Company adopted ASC 606, *Revenue from Contracts with Customers* on June 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption. The reported results for fiscal year 2019 reflect the application of ASC 606 guidance while the reported results for fiscal year 2018 were prepared under the guidance of ASC 605, Revenue Recognition (“ASC 605”). For discussion of the Company’s accounting policy for revenue recognition under ASC 605, refer to Item 8 of the Annual Report on Form 10-K for the year ended May 31, 2018. The adoption of ASC 606 did not have an impact on the Company’s consolidated balance sheet, results of operations, equity or cash flows as of the adoption date or for the periods presented, other than the enhanced disclosures in the Notes to the financial statements.

Under ASC 606, revenue is recognized when a customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

The Company's products consist of a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for vascular access, for the treatment of peripheral vascular disease and for use in oncology and surgical settings. The Company's devices are generally used in minimally invasive, image-guided procedures. Most of the Company's products are intended to be used once and then discarded, or they may be temporarily implanted for short- or longer-term use. The Company sells its products to its distribution partners and to end users, such as interventional radiologists, interventional cardiologists, vascular surgeons, urologists, interventional and surgical oncologists and critical care nurses.

The Company contracts with its customers based on customer purchase orders, which in many cases are governed by master purchasing agreements. The Company’s contracts with customers are generally for product only, and do not include other performance obligations such as services or other material rights. As part of its assessment of each contract, the Company evaluates certain factors including the customer’s ability to pay (or credit risk). For each contract, the Company considers the promise to transfer products, each of which is distinct, to be the identified performance obligations.

Transaction prices of products are typically based on contracted rates. Product revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products to a customer. To the extent the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing the expected value method. As such, revenue is recorded net of rebates, returns and other deductions.

If a contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price based on the estimated relative standalone selling prices of the promised products underlying each performance obligation. The Company has standard pricing for its products and determines standalone selling prices based on the price at which the performance obligation is sold separately. Contracts with our customers typically include a single performance obligation related to the sale of our products.

Revenue is recognized when control of the product is transferred to the customer (i.e., when the Company's performance obligation is satisfied), which occurs at a point in time, and may be upon shipment from the Company's manufacturing site or delivery to the customer's named location, based on the contractual shipping terms of a contract.

In determining whether control has transferred, the Company considers if there is a present right to payment from the customer and when physical possession, legal title and risks and rewards of ownership have transferred to the customer.

The Company typically invoices customers upon satisfaction of identified performance obligations. As the Company's standard payment terms are 30 to 90 days from invoicing, the Company does not provide any significant financing to its customers.

Sales, value add, and other taxes collected on behalf of third parties are excluded from revenue.

Revenues from product sales are recorded at the net sales price (transaction price), which includes estimates of variable consideration for which reserves are established for discounts, returns, rebates and allowances that are offered within contracts between the Company and its customers. These reserves are based on the amounts earned or to be claimed on the related sales and are classified as a current liability.

A receivable is recognized in the period the Company ships the product. Payment terms on invoiced amounts are based on contractual terms with each customer and generally coincide with revenue recognition. Accordingly, the Company does not have any contract assets associated with the future right to invoice its customers. In some cases, if control of the product has not yet transferred to the customer or the timing of the payments made by the customer precedes the Company's fulfillment of the performance obligation, the Company recognizes a contract liability that is included in deferred revenue in the accompanying consolidated balance sheets.

The Company provides certain customers with rebates and allowances that are explicitly stated in the Company's contracts and are recorded as a reduction of revenue in the period the related product revenue is recognized. The Company establishes a liability for such amounts, which is included in accrued expenses in the accompanying consolidated balance sheets. These rebates and allowances result from performance-based offers that are primarily based on attaining contractually specified sales volumes and administrative fees the Company is required to pay to group purchasing organizations.

The Company generally offers customers a limited right of return. Product returns after 30 days must be pre-approved by the Company and customers may be subject to a 20% restocking charge. To be accepted, a returned product must be unadulterated, undamaged and have at least twelve months remaining prior to its expiration date. The Company estimates the amount of its product sales that may be returned by its customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized. The Company currently estimates product return liabilities using its historical product return information and considers other factors that it believes could significantly impact its expected returns, including product recalls. During the year ended May 31, 2019, such product returns were not material.

Acquisitions and Contingent Consideration

The Company allocates the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values. The estimates used to value the net assets acquired are based in part on historical experience and information obtained from the management of the acquired company. The Company generally values the identifiable intangible assets acquired using a discounted cash flow model. The significant estimates used in valuing certain of the intangible assets include, but are not limited to: future expected cash flows of the asset, discount rates to determine the present value of the future cash flows, attrition rates of customers, royalty rates and expected technology life cycles. The Company also estimates the useful lives of the intangible assets based on the expected period over which the Company anticipates generating economic benefit from the asset.

The Company's estimates of fair value are based on assumptions believed to be reasonable at that time. If management made different estimates or judgments, material differences in the fair values of the net assets acquired may result.

Certain of the Company's business combinations involve potential payment of future consideration that is contingent upon the achievement of certain product development milestones and/or contingent on the acquired business reaching certain performance milestones. The Company records contingent consideration at fair value at the date of acquisition based on the consideration expected to be transferred, estimated as the probability weighted future cash flows, discounted back to present value. The fair value of contingent consideration is measured using projected payment dates, discount rates, probabilities of payment, and projected revenues (for revenue-based considerations). Projected revenues are based on the Company's most recent internal operational budgets and long-range strategic plans. The discount rate used is determined at the time of measurement in accordance with accepted valuation methodologies. Changes in projected revenues, probabilities of payment, discount rates, and projected payment dates may result in adjustments to the fair value measurements. Contingent consideration is remeasured each reporting period using Level 3 inputs, and the change in fair value, including accretion for the passage of time, is recognized as income or expense within operating expenses in the consolidated statements of income. Contingent consideration payments made soon after the acquisition date are classified as investing activities in the consolidated statements of cash flows. Contingent consideration payments not made soon after the acquisition date that are related to the acquisition date fair value are reported as financing activities in the consolidated statements of cash flows, and amounts paid in excess of the original acquisition date fair value are reported as operating activities in the consolidated statements of cash flows.

Goodwill and Intangible Assets

Intangible assets other than goodwill, indefinite lived intangible assets and in process research and development ("IP R&D") are amortized over their estimated useful lives, which range between two to eighteen years, on either a straight-line basis over the expected period of benefit or as revenues are earned from the sales of the related products. We periodically review the estimated useful lives of our intangible assets and review such assets for impairment whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable. If an intangible asset is considered to be impaired, the amount of the impairment will equal the excess of the carrying value over the fair value of the asset.

Goodwill and other intangible assets that have indefinite useful lives are not amortized, but rather, are tested for impairment annually or more frequently if impairment indicators arise. Goodwill represents the excess of the purchase price over the fair value of the net tangible and identifiable intangible assets acquired in each business combination. Goodwill and intangible assets have been recorded at either incurred or allocated cost. Allocated costs were based on respective fair market values at the date of acquisition.

For goodwill, the impairment test requires a comparison of the estimated fair value of the reporting unit to which the goodwill is assigned to the carrying value of the assets and liabilities of that reporting unit. The determination of reporting units also requires management judgment. The Company considers whether a reporting unit exists within a reportable segment based on the availability of discrete financial information. If the carrying value of the reporting unit exceeds the fair value of the reporting unit, the carrying value of the reporting unit's goodwill is reduced to its fair value through an adjustment to the goodwill balance, resulting in an impairment charge.

The Company operates as a single operating segment with one reporting unit and consequently evaluates goodwill for impairment based on an evaluation of the fair value of the Company as a whole. The Company determined the fair value of the reporting unit based on the market valuation approach and concluded that it was not more-likely-than-not that the fair value of the Company's reporting unit was less than its carrying value.

Contingencies

We are involved, both as a plaintiff and a defendant, in various legal proceedings that arise in the ordinary course of business, including product liability, as further discussed in Note 17 to our consolidated financial statements. Accruals recorded for various contingencies including legal proceedings, self-insurance and other claims, are based on judgment, the probability of losses and, where applicable, the consideration of opinions of internal and/or external legal counsel, internal and/or external technical consultants and actuarially determined estimates. When a range is established but a best estimate cannot be made, we record the minimum loss contingency amount, which could be zero. An estimate is often initially developed substantially earlier than the ultimate loss is known and is reevaluated each accounting period. As information becomes known, additional loss provision is recorded when either a best estimate can be made or the minimum loss amount is increased. When events result in an expectation of a more favorable outcome than previously expected, our best estimate is changed to a lower amount. We record receivables from third-party insurers up to the amount of the related liability when we have determined that existing insurance policies will provide reimbursement. In making this determination, we consider applicable deductibles, policy limits and the historical payment experience of the insurance carriers. Receivables are not netted against the related liabilities for financial statement presentation.

Results of Operations for the years ended May 31, 2019 and 2018

For the fiscal year ended May 31, 2019, we reported net loss from continuing operations of $11.1 million, or $0.30 loss per diluted share, on net sales of $270.6 million compared to a fiscal year 2018 net loss of $6.2 million, or $0.17 loss per diluted share, on net sales of $261.7 million.

Net Sales

Net sales - Net sales are derived from the sale of our products and related freight charges, less discounts and returns.

Net sales for the year ended May 31, 2019 and 2018 were:

	Year ended May 31,		
(in thousands)	2019	2018	% Growth
Net Sales by Product Category			
Vascular Interventions & Therapies	$ 119,901	$ 119,704	0%
Vascular Access	94,730	92,760	2%
Oncology/Surgery	56,003	49,191	14%
Total	$ 270,634	$ 261,655	3%
Net Sales by Geography			
United States	$ 216,957	$ 213,727	2%
International	53,677	47,928	12%
Total	$ 270,634	$ 261,655	3%

For year ended May 31, 2019, net sales increased $9.0 million to $270.6 million compared to the year ended May 31, 2018.

Vascular Interventions & Therapies

- Total Vascular Interventions & Therapies sales increased $0.2 million primarily attributable to strong performance in AngioVac and Core Peripheral products. The Company continues to see strong case volumes in AngioVac, which increased 20% percent from the prior year due to increased adoption of the Company's unique technology. This was partially offset by decreases in Venous products due to reimbursement challenges and the termination of the Asclera distribution agreement.
- U.S. Vascular Interventions & Therapies sales decreased $1.1 million due to decreased sales volume in Venous products and the termination of the Asclera distribution agreement. This was partially offset by increased case volume in AngioVac and increased sales volume of Core Peripheral products.
- International Vascular Interventions & Therapies sales increased $1.3 million due to increased volume in Venous and Angiographic catheters in EMEA and China.

Vascular Access

- Total Vascular Access sales increased $2.0 million due to growth in BioFlo which increased $2.8 million year over year. The increase in sales is also due to the launch of the BIIM ultrasound product in fiscal year 2019 which had $0.5 million in sales. This was partially offset by a decline in non-BioFlo PICCs of $1.8 million. The Company's BioFlo portfolio now comprises 51% of overall Vascular Access sales, compared to 49% a year ago.
- U.S. Vascular Access sales decreased by $1.2 million due to competitive pressures in the PICC product line. This was partially offset by growth in Midlines and BioFlo Dialysis and Ports which continue to gain traction in the marketplace.
- International Vascular Access sales increased by $3.2 million as the Company continues to expand its global reach of its Vascular Access product offerings.

Oncology/Surgery

- Total Oncology/Surgery sales increased $6.8 million year over year primarily due to $4.9 million in sales of BioSentry products and $4.8 million in sales of RadiaDyne products along with increased sales of NanoKnife disposables of $0.5 million. This was partially offset by decreased sales in Radiofrequency Ablation, Microwave and NanoKnife capital. Microwave sales were negatively impacted by the timing of the Company's prior year replacement shipments of $2.6 million which took place primarily in the first and second quarters of the prior year as a result of the market withdrawal of Acculis. NanoKnife capital decreased $0.9 million due to the timing of capital sales.

- U.S. Oncology sales increased by $6.9 million primarily due to $4.8 million in sales of BioSentry products and $4.8 million in sales of RadiaDyne products. This was partially offset by a $1.5 million decrease in NanoKnife capital and disposable sales and a $0.6 million decrease in RadioFrequency Ablation and Microwave sales.
- International Oncology sales decreased by $0.1 million due to decreased RadioFrequency Ablation and Microwave sales of $0.7 million, partially offset by increased NanoKnife capital and disposable sales of $0.8 million.

Gross Profit, Operating expenses, and Other income (expense)

	Year ended May 31,		
(in thousands)	2019	2018	% Change
Gross profit (exclusive of intangible amortization)	$ 156,000	$ 143,856	8.4%
Gross profit % of sales	57.6%	55.0%	
Research and development	$ 28,258	$ 24,338	16.1%
% of sales	10.4%	9.3%	
Selling and marketing	$ 76,829	$ 73,109	5.1%
% of sales	28.4%	27.9%	
General and administrative	$ 34,902	$ 30,991	12.6%
% of sales	12.9%	11.8%	

Gross profit - Gross profit consists of net sales less the cost of goods sold, which includes the costs of materials, products purchased from third parties and sold by us, manufacturing personnel, royalties, freight, business insurance, depreciation of property and equipment and other manufacturing overhead, exclusive of intangible amortization.

Gross profit increased by $12.1 million compared to the prior year. The increase is attributable to the following:

- Net productivity of $2.5 million, where plant consolidation contributed $3.3 million of favorability partially offset by increased freight expense of $0.8 million.
- Sales volume and mix positively contributed $1.5 million year over year.
- Currency and pricing headwinds negatively impacting gross margin by $2.0 million year over year.
- Sales of BioSentry and RadiaDyne products contributed $6.9 million to gross profit.
- Prior year reserve of $1.7 million related to the discontinuation of our RadioFrequency Ablation product in Japan.
- The expiration of a royalty agreement in fiscal year 2018 resulted in $1.5 million of favorability compared to the prior year.

Research and development expenses - Research and development (“R&D”) expenses include internal and external costs to develop new products, enhance existing products, validate new and enhanced products, manage clinical, regulatory and medical affairs.

R&D expense increased $3.9 million compared to the prior year. The increase is attributable to the following:

- New product development and clinical efforts related to the Company’s investment areas of NanoKnife, Thrombus Management and BioFlo increased $3.5 million.
- Increased compensation and benefits of $0.5 million primarily as a result of increased variable compensation.

Sales and marketing expenses - Sales and marketing (“S&M”) expenses consist primarily of salaries, commissions, travel and related business expenses, attendance at medical society meetings, product promotions and marketing activities.

S&M expense increased by $3.7 million compared to the prior year. The increase is attributable to the following:

- Compensation and benefits increase of approximately $3.7 million which is primarily attributed to increased headcount as a result of the BioSentry and RadiaDyne acquisitions along with higher variable compensation.

General and administrative expenses - General and administrative (“G&A”) expenses include executive management, finance, information technology, human resources, business development, legal, and the administrative and professional costs associated with those activities.

G&A expense increased by $3.9 million compared to the prior year. The increase is attributable to the following:

- Compensation and benefits increase of approximately $2.8 million primarily as a result of increased variable compensation, salaries and benefits and stock based compensation.
- Increased legal fees related to ongoing litigation that is within the normal course of business of $0.6 million.
- Increased other expenses for technology investments of $0.3 million and lease expense of $0.2 million.

	Year ended May 31,		
(in thousands)	2019	2018	$ Change
Amortization of intangibles	$ 17,056	$ 13,906	$ 3,150
Change in fair value of contingent consideration	$ (6,776)	$ 250	$ (7,026)
Acquisition, restructuring and other items, net	$ 15,127	$ 15,432	$ (305)
Other expense	$ (5,306)	$ (3,093)	$ (2,213)

Amortization of intangibles - Represents the amount of amortization expense that was taken on intangibles assets held by the Company.

- The change in amortization expense from the prior year is due to intangible asset additions as a result of the BioSentry and RadiaDyne acquisitions. The BioSentry acquisition increased intangible assets by $26.0 million and resulted in additional amortization expense of $1.5 million. The RadiaDyne acquisition increased intangible assets by $25.6 million and resulted in additional amortization expense of $1.7 million

Change in fair value of contingent consideration - Represents changes in contingent consideration driven by changes to estimated future payments on earn-out liabilities created through acquisitions and amortization of present value discounts on long-term contingent consideration.

- The increase from the prior year is due to contingent considerations that were recorded as part of the BioSentry and RadiaDyne acquisitions of $2.8 million and $22.3 million, respectively. In the fourth quarter, adjustments to the sales projections for RadiaDyne products resulted in an $8.4 million gain. The remaining change in the fair value in contingent consideration is the result of amortization of the present value discount of $1.6 million. In addition, in the second quarter of fiscal year 2018, the final minimum payment was made on the AngioVac product contingent consideration and a $2.1 million payment was made on the Microsulis contingent consideration during the first quarter of fiscal 2019. Only one minimum payment is remaining on the Microsulis contingent consideration.

Acquisition, restructuring and other items, net - Acquisition, restructuring and other items, net represents costs associated with mergers and acquisitions, restructuring expenses, legal costs that are related to litigation that is not in the ordinary course of business, legal settlements and other one-time items.

Acquisition, restructuring and other items, net decreased by $0.3 million compared to the prior year. The decrease is attributable to the following:

- M&A expense of $4.0 million was incurred in fiscal year 2019 compared to $1.7 million in the prior year.
- Legal expense, related to litigation that is outside of the normal course of business, of $7.8 million was recorded in fiscal year 2019 compared to $8.4 million in fiscal year 2018. Included in the $7.8 million, is a $3.4 million settlement received for the Biolitec litigation and a $2.5 million accrual for the settlement of the Merz contract termination.
- For the year ended 2018, the Company incurred $4.7 million of expense which consisted of $1.4 million of severance, $2.9 million of costs to move the product lines and $0.2 million in contract termination expenses related to the plant consolidation that was announced in the third quarter of fiscal year 2017. The plant consolidation was completed in the fourth quarter of fiscal year 2018; therefore, only $0.3 million of expense was incurred for the year ended 2019.

Other expenses - Other expenses include interest expense, foreign currency impacts, bank fees, and amortization of deferred financing costs.

- The increase in other expenses from the prior year of $2.2 million is due to increased interest expense of $1.9 million primarily due to the draw on the Revolving Facility during fiscal year 2019. In addition, foreign currency fluctuations increased $0.7 million. These increases were partially offset by other income of $0.4 million.

Income Tax Provision (Benefit)

(in thousands)	For year ended May 31, 2019	2018
Income tax expense (benefit)	$ (3,556)	$ (11,036)
Effective tax rate including discrete items	24%	64%

Our effective tax rate was a benefit of 24% for fiscal year 2019 compared with an effective tax rate benefit of 64% for the prior year.

The prior year rate primarily reflects income tax benefit of $8.9 million driven by the impact of the U.S. Tax Reform, the valuation allowance recorded and the deferred tax liability related to intangibles that have an indefinite reversal period ("naked credit deferred tax liability"), which as a result of U.S. Tax Reform can now be considered as a source of income to recover indefinite lived NOLs.

The Company regularly assesses its ability to realize its deferred tax assets. Assessing the realization of deferred tax assets requires significant management judgment. In determining whether its deferred tax assets are more likely than not realizable, the Company evaluated all available positive and negative evidence, and weighted the evidence based on its objectivity. Evidence the Company considered included its history of net operating losses, which resulted in the Company recording a full valuation allowance for its deferred tax assets in fiscal year 2016, except the naked credit deferred tax liability.

Based on the review of all available evidence, the Company determined that it has not yet attained a sustained level of profitability and the objectively verifiable negative evidence outweighed the positive evidence. Therefore, the Company has provided a valuation allowance on its federal and state net operating loss carryforwards, federal and state R&D credit carryforwards and other net deferred tax assets that have a limited life and are not supportable by the naked credit deferred tax liability sourced income as of May 31, 2019. The Company will continue to assess the level of the valuation allowance required. If sufficient positive evidence exists in future periods to support a release of some or all of the valuation allowance, such a release would likely have a material impact on the Company’s results of operations.

Income From Discontinued Operations

(in thousands)	For year ended May 31, 2019	2018
Income from discontinued operations before gain on sale of Fluid Management	$ 27,579	$ 24,728
Gain on sale of Fluid Management	46,592	—
Income from discontinued operations before income taxes	74,171	24,728
Provision for income taxes	1,685	2,166
Income from discontinued operations	$ 72,486	$ 22,562

The Company applied the “Intraperiod Tax Allocation” rules under ASC 740, which requires the allocation of an entity’s total annual income tax provision among continuing operations and, in the Company’s case, discontinued operations. Included in the $1.6 million income tax expense for fiscal year 2019 is $0.6 million tax expense related to the gain on the Divestiture. The taxes on the gain were calculated using various state statutory tax rates and are partially offset by the utilization of historical state net operating losses. There are no current federal taxes on the gain due to utilization of historical net operating losses which had a corresponding valuation allowance.

Results of Operations for the years ended May 31, 2018 and 2017

For the fiscal year ended May 31, 2018, we reported net loss from continuing operations of $6.2 million, or $0.17 loss per basic and diluted common share, on net sales of $261.7 million compared to a fiscal year 2017 net loss of $7.1 million, or $0.19 loss per basic and diluted common share, on net sales of $269.8 million.

Net Sales

<u>Net sales</u> - Net sales are derived from the sale of our products and related freight charges, less discounts and returns.

Net sales for the year ended May 31, 2018 and 2017 were:

(in thousands)	Year ended May 31, 2018	2017	% Growth
Net Sales by Product Category			
Vascular Interventions & Therapies	$ 119,704	$ 128,747	(7)%
Vascular Access	92,760	96,481	(4)%
Oncology/Surgery	49,191	44,560	10%
Total	$ 261,655	$ 269,788	(3)%
Net Sales by Geography			
United States	$ 213,727	$ 223,816	(5)%
International	47,928	45,972	4%
Total	$ 261,655	$ 269,788	(3)%

For year ended May 31, 2018, net sales decreased $8.1 million to $261.7 million compared to the year ended May 31, 2017.

<u>Vascular Interventions & Therapies</u>

- Total Vascular Interventions & Therapies sales decreased $9.0 million primarily attributable to decreased sales volume of Venous by $9.3 million and Angiographic and Core products of $1.6 million. The decrease in Venous is primarily attributed to our largest customer discontinuing their exclusive use of our EVLT product. This decreased sales volume was offset by an increase of volume of AngioVac of $0.9 million.
- U.S. Vascular Interventions & Therapies sales decreased $8.0 million primarily due to decreased sales volume of Venous of $9.1 million and Angiographic and Core products of $0.9 million. This decreased sales volume was offset by an increase in AngioVac of $1.0 million and $0.9 million in increased freight and rebate revenue.
- International Vascular Interventions & Therapies sales decreased $1.0 million.

<u>Vascular Access</u>

- Total Vascular Access sales decreased $3.7 million primarily in our non-BioFlo businesses. Our BioFlo product lines, other than BioFlo PICCs, increased $2.4 million. This was partially offset by decreased sales of BioFlo PICCs of $2.5 million and non-BioFlo products of $3.1 million. BioFlo product lines comprise 49% of our overall Vascular Access sales, compared to 47% a year ago.
- U.S. Vascular Access sales declined by $3.8 million due to softness across the portfolio offset by Midline, BioFlo dialysis and ports which continued to gain traction in the marketplace.
- International Vascular Access sales increased $0.1 million.

<u>Oncology/Surgery</u>

- Total Oncology/Surgery sales increased $4.6 million year over year primarily due to increased sales of the Solero Microwave generators of $1.3 million, Solero Microwave probes of $6.4 million and other sales of $0.7 million. $5.2 million of the increased probe sales were a result of the market withdrawal of Acculis, which was replaced by Solero probes in the beginning of fiscal year 2018 upon the approval of the device. This was partially offset by decreased Radiofrequency Ablation sales of $3.4 million and NanoKnife disposable sales of $0.6 million. The decrease in Radiofrequency Ablation sales was primarily due to the discontinuation of the product in Japan.
- U.S. Oncology/Surgery increased by $0.6 million, driven primarily through increased Microwave sales of $3.4 million. This increase was partially offset by decreases in Radiofrequency Ablation of $1.7 million and NanoKnife of $1.4 million.
- International Oncology/Surgery sales increased $4.0 million year over year as a result of increased NanoKnife capital and disposable sales of $1.1 million and Solero Microwave capital and disposable sales of $4.3 million. This increase was partially offset by a $1.7 million decrease in RadioFrequency Ablation.

Gross Profit, Operating expenses, and Other income (expense)

(in thousands)	Year ended May 31, 2018	2017	% Change
Gross profit	$ 143,856	$ 143,950	(0.1)%
Gross profit % of sales	55.0%	53.4%	
Research and development	$ 24,338	$ 24,148	0.8 %
% of sales	9.3%	9.0%	
Selling and marketing	$ 73,109	$ 74,865	(2.3)%
% of sales	27.9%	27.7%	
General and administrative	$ 30,991	$ 31,133	(0.5)%
% of sales	11.8%	11.5%	

Gross profit - Gross profit consists of net sales less the cost of goods sold, which includes the costs of materials, products purchased from third parties and sold by us, manufacturing personnel, royalties, freight, business insurance, depreciation of property and equipment and other manufacturing overhead.

Gross profit decreased by $0.1 million compared to the prior year. The decrease is attributable to the following:

- The expiration of a royalty agreement of approximately $4.8 million.
- $2.3 million in deferred revenue was recognized in fiscal year 2018 related to the Acculis probe recall announced in the fourth quarter of fiscal year 2017 which was offset by additional expense of $3.2 million that was incurred as a result of the market withdrawal of Microwave generators.
- In the second quarter of fiscal year 2018, the Company decided to discontinue selling our RadioFrequency Ablation product in Japan which resulted in a $1.7 million inventory provision.
- Currency tailwinds netted with slight negative price driving $0.5 million favorable gross margin impact.
- Volume softness and mix of approximately $4.5 million partially offset by net productivity of $1.7 million.

Research and development expenses - Research and development (“R&D”) expenses include internal and external costs to develop new products, enhance existing products, validate new and enhanced products, manage clinical, regulatory and medical affairs.

R&D expense increased $0.2 million compared to the prior year. The increase is attributable to the following:

- Increased headcount in the R&D department compared to the prior year resulted in $0.6 million of additional expense. These increases were partially offset by less project spend of $0.4 million.

Sales and marketing expenses - Sales and marketing (“S&M”) expenses consist primarily of salaries, commissions, travel and related business expenses, attendance at medical society meetings, product promotions and marketing activities.

S&M expense decreased by $1.8 million compared to the prior year. The decrease is attributable to the following:

- Compensation and benefits decrease of approximately $2.7 million was primarily the result of decreased variable compensation of $2.3 million and open headcount of $0.5 million.
- Open headcount resulted in increased travel of $0.5 million and recruiting expense of $0.3 million.
- Lower consulting spend of $0.7 million was partially offset by increased trade show and meeting expense of $0.5 million and increased samples expense related to the Solero launch of $0.2 million.

General and administrative expenses - General and administrative (“G&A”) expenses include executive management, finance, information technology, human resources, business development, legal, and the administrative and professional costs associated with those activities.

G&A expense decreased by $0.1 million compared to the prior year. The decrease is attributable to the following:

- Compensation and benefits increase of approximately $1.9 million was primarily the result of increased headcount year over year which was partially offset by a decrease in variable compensation expense of $0.5 million.

- These increases were offset by lower depreciation expense of $0.8 million, a decrease in bad debt expense of $0.3 million and a decrease in recruiting expenses of $0.4 million.

	Year ended May 31,		
(in thousands)	2018	2017	$ Change
Amortization of intangibles	$ 13,906	$ 14,567	$ (661)
Change in fair value of contingent consideration	$ 250	$ (15,261)	$ 15,511
Acquisition, restructuring and other items, net	$ 15,432	$ 27,510	$ (12,078)
Medical device excise tax	$ —	$ (1,837)	$ 1,837
Other expense	$ (3,093)	$ (3,120)	$ 27

Amortization of intangibles - Represents the amount of amortization expense that was taken on intangibles assets held by the Company.

- The decrease of $0.7 million is primarily related to intangible assets that became fully amortized in the prior year.

Change in fair value of contingent consideration - Represents changes in contingent consideration driven by changes to estimated future payments on earn-out liabilities created through acquisitions and amortization of present value discounts on long-term contingent consideration.

- In fiscal year 2017, a gain of $13.4 million was taken on the AngioVac product as a result of decreases in future sales projections that eliminated any payments above minimums and a gain of $3.1 million on the TiLo product as the milestone was determined to not be achieved. The normal amortization of the present value discount on the contingent liabilities was approximately $0.1 million for the first two quarters of fiscal year 2018. For the last two quarters of fiscal year 2018, amortization is now less than $0.1 million per quarter as the final minimum payment was made on AngioVac in the second quarter of fiscal year 2018

Acquisition, restructuring and other items, net - Acquisition, restructuring and other items, net represents costs associated with mergers and acquisitions, restructuring expenses, legal costs that are related to litigation that is not in the ordinary course of business, legal settlements and other one-time items.

Acquisition, restructuring and other items, net decreased $12.1 million compared to the prior year. The decrease is attributable to the following:

- In fiscal year 2018, there was $4.7 million of expense related to the plant consolidation that was announced in the third quarter of fiscal year 2017. The expense consisted mainly of severance of $1.4 million, costs to move the product lines including equipment transfer expenses, accelerated depreciation for assets that will not be transferred, product validation and other start-up costs of $2.9 million and $0.2 million in contract termination expenses.
- In fiscal year 2017, there was $1.3 million of expense related to the plant consolidation that was announced in the third quarter of fiscal year 2017. The expense consisted of severance of $0.8 million and start-up costs to move the product lines including equipment transfer expenses and accelerated depreciation for assets that will not be transferred of $0.5 million.
- In fiscal year 2017, there was a $2.0 million write-off of Embomedics due to termination of the agreement and a $3.6 million write-off related to the decision to discontinue our investment in the TiLo product.
- A litigation settlement accrual of $12.5 million was recorded in the fourth quarter of fiscal year 2017 for the agreement that was reached with the DOJ.
- Legal expenses, related to litigation that is outside of the normal course of business, of $10.1 million were recorded in the current year compared to $7.0 million in the prior year.

Cost savings from the plant consolidation will primarily impact cost of goods sold. While some cost savings were recognized in 2018 we expect additional savings of approximately $4.0 million to $5.0 million in fiscal year 2019.

Medical device excise tax - Medical device excise tax is assessed on our U.S. product sales subject to exclusions and adjustments.

- The Medical Device Excise Tax was suspended on January 1, 2016 and the suspension was upheld in January 2018. In fiscal year 2017, there was a $1.8 million refund from the Internal Revenue Service related to prior medical device taxes paid.

Other expenses - Other expenses include interest expense, foreign currency impacts, bank fees, and amortization of deferred financing costs and remained consistent with the prior year.

Income Tax Provision (Benefit)

	Year ended May 31,	
(in thousands)	2018	2017
Income tax expense (benefit)	$ (11,036)	$ (7,243)
Effective tax rate including discrete items	64%	51%

Our effective tax rate benefit was 64% for fiscal year 2018 compared with a benefit of 51% for the prior year.

The current year rate reflects an income tax benefit of $8.9 million driven by the impact of the U.S. Tax Reform, the valuation allowance recorded and the deferred tax liability related to intangibles that have an indefinite reversal period ("naked credit deferred tax liability"), which as a result of U.S. Tax Reform can now be considered as a source of income to recover indefinite lived NOLs.

The Company is required to record deferred tax assets and liabilities based on the enacted tax rates at which they are expected to reverse in the future. The Company has remeasured its deferred tax positions as of December 31, 2017 at the new enacted tax rate, resulting in a decrease to its net deferred tax assets and a corresponding decrease to its valuation allowance, with no net impact to tax expense. The Company recorded an income tax benefit of approximately $9.3 million due to the revaluation of the naked credit deferred tax liability. The Tax Reform Act changed the NOL carryover rules and created a new limitation on their use. NOLs created in fiscal year 2018 and beyond may be carried forwarded indefinitely in any year. As a result, the Company’s naked credit deferred tax liability can now be considered as a source of income to recover indefinite lived NOLs. Consequently, the Company has offset certain of its naked credit deferred tax liability against its deferred tax assets resulting in a reduction in the valuation allowance and a $3.0 million benefit in the year ended May 31, 2018.

The prior year rate primarily reflects income tax benefit driven by a benefit on the loss from continuing operations, impact of the U.S. valuation allowance and the naked credit deferred tax liability that could not be considered as a source of income to recover the deferred tax assets.

The Company regularly assesses its ability to realize its deferred tax assets. Assessing the realization of deferred tax assets requires significant management judgment. In determining whether its deferred tax assets are more likely than not realizable, the Company evaluated all available positive and negative evidence, and weighted the evidence based on its objectivity. Evidence the Company considered included its history of net operating losses, which resulted in the Company recording a full valuation allowance for its deferred tax assets in fiscal year 2016 and each year thereafter. The Company was marginally profitable (pretax and adjusted for permanent items) on a cumulative basis for the three years ended May 31, 2018, but substantially all of that profitability was achieved during 2018.

Based on the review of all available evidence, the Company determined that it has not yet attained a sustained level of profitability and the objectively verifiable negative evidence outweighed the positive evidence and therefore, the Company has provided a valuation allowance for the full amount, with the exception of the naked credit deferred tax liability, of its net deferred tax asset as of May 31, 2018. The Company will continue to assess the level of the valuation allowance required. If sufficient positive evidence exists in future periods to support a release of some or all of the valuation allowance, such a release would likely have a material impact on the Company’s results of operations.

Income From Discontinued Operations

(in thousands)	For year ended May 31, 2018	2017
Income from discontinued operations before income taxes	24,728	24,142
Provision for income taxes	2,166	12,082
Income from discontinued operations	$ 22,562	$ 12,060

The Company applied the “Intraperiod Tax Allocation” rules under ASC 740, which requires the allocation of an entity’s total annual income tax provision among continuing operations and, in the Company’s case, discontinued operations.

Liquidity and Capital Resources

Our cash and cash equivalents totaled $227.6 million as of May 31, 2019, compared with $74.1 million as of May 31, 2018. There were no marketable securities as of May 31, 2019. As of May 31, 2018 there was $1.3 million which consisted of auction rate securities. As of May 31, 2019, total debt outstanding was $132.5 million which is comprised of the Term Loan of $87.5 million and the Revolving Facility of $45.0 million. The fair value of the contingent consideration liability as of May 31, 2019 was $13.5 million.

The table below summarizes our cash flows for the years ended May 31, 2019, 2018 and 2017:

(in thousands)	Year ended May 31, 2019	2018	2017
Cash provided by (used in):			
Operating activities	$ 37,440	$ 41,287	$ 55,745
Investing activities	82,554	(3,656)	(2,551)
Financing activities	33,931	(11,551)	(37,983)
Effect of exchange rate changes on cash and cash equivalents	(380)	472	—
Net change in cash and cash equivalents	$ 153,545	$ 26,552	$ 15,211

During the years ended May 31, 2019, 2018 and 2017, cash flows consisted of the following:

<u>Cash provided by operating activities:</u>

Year ended 2019:

- Net income was driven by the sale of the Fluid Management business. Net loss from continuing operations was driven by higher operating expenses in research and development, selling and marketing and general administrative as well as costs related to our acquisition and restructuring activities. The loss was partially offset by increased sales and improved gross profit.
- Working capital was negatively impacted by increased inventory on hand of $1.4 million. Days sales outstanding ("DSO") increased as a result of increased sales during the fourth quarter. This had a $3.2 million negative impact on working capital. The Company continued to optimize days payables outstanding ("DPO"), which resulted in a $5.2 million favorable impact on working capital.

Year ended 2018:

- Net income was driven by higher gross margin, lower operating expenses in selling and marketing, general and administrative and acquisition, restructuring and other items, net. Partially offsetting the positive cash impact was a $9.3 million non-cash discrete tax benefit as a result of the Tax Reform Act and the revaluation of the Company's deferred tax assets and liabilities to reflect the lower statutory rate.
- The Company continues to focus on optimizing days sales outstanding ("DSO") which contributed $5.0 million to working capital improvement. Working capital was also positively impacted by decreased inventory on hand of $5.7 million. Even though the Company continued to optimize days payables outstanding ("DPO"), the decrease in raw material purchases at year end negatively impacted working capital from accounts payable and accrued liabilities.

Year ended 2017:

- Net income was driven by higher gross margins, lower sales and marketing expenses as well as the medical device tax refund. Also impacting net income, were non-cash items which consisted of $15.3 million of contingent consideration gains, $2.0 million in the write-off of the Embomedics investment and $3.6 million in intangible write-offs related to TiLo.
- With regards to working capital, the Company focused on optimizing both DSO and DPO which contributed to $15.2 million of working capital improvement. With respect to inventory, the $2.4 million reserve for Acculis inventory partially offset the inventory build related to the plant consolidation.

Cash used in investing activities:

Year ended 2019:

- $3.1 million in fixed asset additions, primarily for maintenance of equipment.
- $37.0 million cash payment to acquire the BioSentry product from SSC and a $47.9 million cash payment to acquire RadiaDyne as described in Note 2 to the financial statements.
- $169.2 million in cash proceeds as a result of the Divestiture described in Note 3 to the financial statements.
- $1.3 million in proceeds from the sale of an auction rate security.

Year ended 2018:

- $2.4 million in fixed asset additions.
- In the third quarter, we entered into a distribution and license agreement where we recorded the upfront license fee of $1.3 million as an intangible asset that will be amortized over thirty-six months.

Year ended 2017:

- $3.0 million in fixed asset additions.
- $0.5 million in proceeds from an auction rate security that was called during fiscal year 2017.

Cash used in financing activities:

Year ended 2019:

- $55.0 million draw on the Revolving Facility as a result of the RadiaDyne acquisition described in Note 2 to the financial statements.
- $5.0 million repayment on the Term Loan in both the current year and prior year. This is consistent with the required amortization payment on the Term Loan. There was also a $10.0 million repayment on the Revolving Facility in the third quarter of fiscal year 2019.
- $2.0 million of proceeds from stock option and ESPP activity.
- $8.1 million payment on earn-out liabilities.

Year ended 2018:

- $5.0 million in repayments on long-term debt, consistent with the required amortization payment on the Term Loan.
- $2.9 million of proceeds from stock option and ESPP activity.
- $9.5 million payment on earn-out liabilities.

Year ended 2017:

- Net $23.9 million in repayments on long-term debt after the proceeds from the Credit Agreement and repayment of the old credit agreement.
- $1.3 million in deferred financing fees related to the new credit agreement.
- $10.7 million of proceeds from stock option and ESPP. The large increase is related to the exercise of stock based awards from executive management turnover that took place in fiscal year 2017.
- $9.9 million payment on earn-out liabilities.
- $13.6 million from the repurchase of common shares in fiscal year 2017.

On November 7, 2016, the Company entered into a Credit Agreement that provides for a $100.0 million senior secured term loan facility and a $150.0 million senior secured revolving credit facility, which includes up to a $20.0 million sublimit for letters of credit and a $5.0 million sublimit for swingline loans. On May 24, 2018, the Company entered into Amendment One of the Credit Agreement. This amendment increased the amount of U.S. cash that can be utilized to calculate net debt from $10.0 million to $20.0 million.

On June 3, 2019, we paid down the Credit Agreement, including the Term Loan and Revolving Facility and entered into a revolver only facility with a capacity of $125.0 million. We believe that our current cash and investment balances, together with cash generated from operations and access to our revolving credit facility, will provide sufficient liquidity to meet our anticipated needs for capital for at least the next 12 months. If we seek to make significant acquisitions of other businesses or technologies in the future for cash, we may require external financing.

Our contractual obligations as of May 31, 2019 are set forth in the table below (in thousands). We have no variable interest entities or other off-balance sheet obligations.

	Cash payments due by period as of May 31, 2019				
(in thousands)	Total	Less than One Year	1-3 Years	3-5 Years	After 5 Years
Contractual Obligations:					
Long term debt and interest	$ 145,032	$ 12,797	$ 132,235	$ —	$ —
Operating leases (1)	12,749	2,920	6,602	3,227	—
Purchase obligations (1)	407	407	—	—	—
Acquisition-related future obligations (2)	15,208	5,208	10,000	—	—
Indemnification holdback	5,000	5,000	—	—	—
Royalties	55,300	3,800	11,400	11,400	28,700
Litigation matters (3)	2,700	2,700	—	—	—
	$ 236,396	$ 32,832	$ 160,237	$ 14,627	$ 28,700

(1) The non-cancelable operating leases and inventory purchase obligations are not reflected on our consolidated balance sheets under accounting principles generally accepted in the United States of America.
(2) Acquisition-related future obligations include scheduled minimum payments and contingent payments based upon achievement of performance measures or milestones such as sales or profitability targets, the achievement of research and development objectives or the receipt of regulatory approvals. The amount represents the undiscounted value of contingent liabilities recorded on the balance sheet. Timing of payments are as contractually scheduled, or where contingent, the Company's best estimate of payment timing.
(3) Refer to Note 17 for a description on the litigation matters.

Recent Accounting Pronouncements

Refer to Note 1 of the Notes to the Consolidated Financial Statements for Recently Issued Accounting Pronouncements.

Item 7A. ***Quantitative and Qualitative Disclosures about Market Risk.***

FOREIGN CURRENCY EXCHANGE RATE RISK

We are exposed to market risk from changes in currency exchange rates, as well as interest rate fluctuations on our credit facility and investments that could impact our results of operations and financial position.

We transact sales in currencies other than the U.S. Dollar, particularly the Euro, British pound and Canadian dollar. Approximately 7.4% of our sales in fiscal year 2019 were denominated in foreign currencies. We do not have expenses denominated in foreign currencies at the level of our sales and as a result, our profitability is exposed to currency fluctuations. When the U.S. Dollar strengthens, our sales and gross profit will be negatively impacted. In addition, we have assets and liabilities denominated in non-functional currencies which are remeasured at each reporting period, with the offset to changes presented as a component of Other (Expenses) Income. Significant non-functional balances include accounts receivable due from a sub-section of our international customers.

INTEREST RATE RISK

On November 7, 2016, we entered into the Credit Agreement which provides for a $100.0 million senior secured Term Loan and a $150.0 million Revolving Facility. Interest on both the Term Loan and Revolving Facility is based on a base rate or Eurodollar rate plus an applicable margin which increases as our total leverage ratio increases, with the base rate and Eurodollar rate having ranges of 0.50% to 1.25% and 1.50% to 2.25% respectively. In the event of default, the interest rate may be increased by 2.0%. A 50 basis point (0.50%) increase or decrease in the interest rate would result approximately in a $2.0 million increase or decrease in interest expense over the remaining life of the agreement.

On June 3, 2019, we paid down the Credit Agreement, including the Term Loan and Revolving Facility and entered into a revolver only facility with a capacity of $125.0 million. As of July 25, 2019 there is no debt outstanding.

CONCENTRATION OF CREDIT RISK

Financial instruments, which potentially subject the Company to significant concentrations of credit risk, consist primarily of cash and cash equivalents, our credit facility and trade accounts receivable.

The Company maintains cash and cash equivalents at various institutions and performs periodic evaluations of the relative credit standings of these financial institutions to ensure their credit worthiness. In addition, the Credit Agreement is structured across five investment grade banks. The Company has the ability to draw equally amongst the five banks which limits the concentration of credit risk of one institution.

Concentration of credit risk with respect to trade accounts receivable is limited due to the large number of customers that purchase products from the Company. No single customer represents more than 10% of total sales. The Company monitors the creditworthiness of its customers to which it grants credit terms in the normal course of business. Although the Company does not currently foresee a significant credit risk associated with the outstanding accounts receivable, repayment is dependent upon the financial stability of our customers.

Item 8. ***Financial Statements and Supplementary Data.***

Financial statements and supplementary data required by Part II, Item 8 are included in Part IV of this report as indexed as Item 15 (a) (1) and (2) of this report, and are incorporated by reference into this Item 8.

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

None.

Item 9A. *Controls and Procedures.*

Evaluation of disclosure controls and procedures

As of the end of the period covered by this report, our management, under the supervision and with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of the design and operation of our disclosure controls and procedures pursuant to Rule 13a-15(b) of the Securities Exchange Act of 1934, as amended. Based on that evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that our disclosure controls and procedures as of the end of the period covered by this report were effective to provide reasonable assurance that the information required to be disclosed by us in reports filed under the Securities Exchange Act of 1934, as amended, is recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms and is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for our Company. Internal control over financial reporting is defined in Rules 13a-15(f) and 15d-15(f) promulgated under the Securities Exchange Act of 1934, as amended, as a process designed by, or under the supervision of, our principal executive and principal financial officers and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States and includes those policies and procedures that:

- Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with accounting principles generally accepted in the United States, and that our receipts and expenditures are being made only in accordance with authorizations of our management and members of our board of directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our 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.

Our management has assessed the effectiveness of our internal control over financial reporting as of May 31, 2019. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework* (2013). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of May 31, 2019.

The effectiveness of our internal control over financial reporting as of May 31, 2019 has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report which appears herein.

Changes in Internal Control over Financial Reporting

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

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of
AngioDynamics, Inc.
Latham, New York

Opinion on Internal Control over Financial Reporting

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

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended May 31, 2019, of the Company and our report dated July 25, 2019, 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/ Deloitte & Touche LLP

Boston, Massachusetts
July 25, 2019

Item 9B. ***Other Information.***

None.

Part III

Certain information required by Part III is omitted from this Annual Report on Form 10-K because we will file a definitive proxy statement within 120 days after the end of our fiscal year end pursuant to Regulation 14A (the “Proxy Statement”) for our annual meeting of Stockholders, currently scheduled for October 2019. The information included in the Proxy Statement under the respective headings noted below is incorporated herein by reference.

Item 10. *Directors, Executive Officers and Corporate Governance.*

Information required in this Annual Report on Form 10-K with respect to Executive Officers is contained in the discussion titled “Executive Officers of the Company” in Part I of this Annual Report on Form 10-K. The balance of the information required by Item 10 is incorporated herein by reference to our Proxy Statement under the heading “Election of Directors”.

Item 11. *Executive Compensation.*

The information required by Item 11 is incorporated herein by reference to our Proxy Statement under the heading “Executive Compensation”.

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

The information required by this caption is incorporated herein by reference to our Proxy Statement under the heading “Ownership of Securities”.

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

The information required by this caption is incorporated herein by reference to our Proxy Statement under the heading “Certain Relationships and Related Transactions”.

Item 14. *Principal Accounting Fees and Services.*

The information required by this caption is incorporated herein by reference to our Proxy Statement under the headings “Audit Matters—Principal Accounting Fees and Services and—Policy on Audit Committee Pre-approval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm”.

Part IV

Item 15. ***Exhibits, Financial Statement Schedules.***

(a)(1) ***Financial Statements***

The following consolidated financial statements and supplementary data of Registrant and its subsidiaries required by Part II, Item 8, are included in Part IV of this report:

(2) ***Financial Statement Schedules***

The following consolidated financial statement schedule is included in Part IV of this report:

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

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and the Board of Directors of
AngioDynamics, Inc.
Latham, New York

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of AngioDynamics, Inc. and subsidiaries (the "Company") as of May 31, 2019 and 2018, the related consolidated statements of operations, comprehensive income, stockholders' equity, and cash flows, for each of the three years in the period ended May 31, 2019, and the related notes and the schedule listed in the Index at Item 15 (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 May 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended May 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also 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 May 31, 2019, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated July 25, 2019 expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

/s/ Deloitte & Touche LLP

Boston, Massachusetts
July 25, 2019

We have served as the Company’s auditor since 2016.

AngioDynamics, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except per share data)

	Year ended May 31,		
	2019	2018	2017
Net sales	$ 270,634	$ 261,655	$ 269,788
Cost of sales (exclusive of intangible amortization)	114,634	117,799	125,838
Gross profit	156,000	143,856	143,950
Operating expenses			
Research and development	28,258	24,338	24,148
Sales and marketing	76,829	73,109	74,865
General and administrative	34,902	30,991	31,133
Amortization of intangibles	17,056	13,906	14,567
Change in fair value of contingent consideration	(6,776)	250	(15,261)
Acquisition, restructuring and other items, net	15,127	15,432	27,510
Medical device excise tax	—	—	(1,837)
Total operating expenses	165,396	158,026	155,125
Operating loss	(9,396)	(14,170)	(11,175)
Other expenses			
Interest expense, net	(5,099)	(3,062)	(2,839)
Other expense	(207)	(31)	(281)
Total other expenses, net	(5,306)	(3,093)	(3,120)
Loss from continuing operations before income tax benefit	(14,702)	(17,263)	(14,295)
Income tax benefit	(3,556)	(11,036)	(7,243)
Net loss from continuing operations	(11,146)	(6,227)	(7,052)
Income from discontinued operations, net of income tax	72,486	22,562	12,060
Net income	$ 61,340	$ 16,335	$ 5,008
Loss per share from continuing operations			
Basic	$ (0.30)	$ (0.17)	$ (0.19)
Diluted	$ (0.30)	$ (0.17)	$ (0.19)
Earnings per share from discontinued operations			
Basic	$ 1.93	$ 0.61	$ 0.33
Diluted	$ 1.93	$ 0.61	$ 0.33
Earnings per share from net income			
Basic	$ 1.64	$ 0.44	$ 0.14
Diluted	$ 1.64	$ 0.44	$ 0.14
Weighted average shares outstanding			
Basic	37,485	37,075	36,617
Diluted	37,485	37,075	36,617

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

AngioDynamics, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in thousands)

	Year ended May 31,		
	2019	2018	2017
Net income	$ 61,340	$ 16,335	$ 5,008
Other comprehensive income (loss), before tax:			
Unrealized gain on marketable securities	33	102	12
Reclassification adjustment for gains included in net income	(116)	—	—
Foreign currency translation gain (loss)	(317)	270	(545)
Other comprehensive income (loss), before tax	(400)	372	(533)
Income tax benefit (expense) related to items of other comprehensive income (loss)	—	—	—
Other comprehensive income (loss), net of tax	(400)	372	(533)
Total comprehensive income, net of tax	$ 60,940	$ 16,707	$ 4,475

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

AngioDynamics, Inc. and Subsidiaries
CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	May 31, 2019	May 31, 2018
Assets		
Current Assets		
Cash and cash equivalents	$ 227,641	$ 74,096
Marketable securities, at fair value	—	1,317
Accounts receivable, net of allowances of $1,906 and $2,466, respectively	43,577	39,401
Inventories	40,071	39,274
Prepaid expenses and other	4,003	4,302
Current assets held for sale	—	9,642
Total current assets	315,292	168,032
Property, plant and equipment, net	24,258	25,715
Other assets	3,835	3,417
Intangible assets, net	145,387	112,547
Goodwill	347,666	285,944
Non-current assets held for sale	—	109,817
Total Assets	$ 836,438	$ 705,472
Liabilities and Stockholders' Equity		
Current Liabilities		
Accounts payable	$ 22,829	$ 15,775
Accrued liabilities	38,338	34,426
Current portion of long-term debt	7,500	5,000
Current portion of contingent consideration	4,635	2,100
Total current liabilities	73,302	57,301
Long-term debt, net of current portion	124,407	86,621
Deferred income taxes	14,542	17,173
Contingent consideration, net of current portion	8,851	1,161
Other long-term liabilities	521	621
Total Liabilities	221,623	162,877
Commitments and Contingencies (Note 17)		
Stockholders' Equity		
Preferred stock, par value $.01 per share, 5,000,000 shares authorized; no shares issued and outstanding	—	—
Common stock, par value $.01 per share, 75,000,000 shares authorized; 37,984,382 and 37,594,493 shares issued and 37,614,382 and 37,224,493 shares outstanding at May 31, 2019 and 2018, respectively	372	370
Additional paid-in capital	555,040	543,762
Retained earnings	66,469	5,129
Treasury stock, 370,000 shares, at cost at May 31, 2019 and 2018, respectively	(5,714)	(5,714)
Accumulated other comprehensive loss	(1,352)	(952)
Total Stockholders' Equity	614,815	542,595
Total Liabilities and Stockholders' Equity	$ 836,438	$ 705,472

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

AngioDynamics, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share data)

	Common Stock		Additional paid in capital	Retained earnings (accumulated deficit)	Accumulated other comprehensive loss	Treasury Stock		Total
	Shares	Amount				Shares	Amount	
Balance at May 31, 2016	36,420,403	$ 363	$ 525,775	$ (16,015)	$ (791)	(142,305)	$ (2,104)	$ 507,228
Net income				5,008				5,008
Exercise of stock options	751,062	7	9,858					9,865
Issuance/cancellation of restricted stock units	158,341	1	(587)					(586)
Issuance of performance share units	23,405							—
Purchase of common stock under Employee Stock Purchase Plan	129,185	1	1,418					1,419
Stock-based compensation			6,183					6,183
Treasury stock retirement	(642,305)	(2)	(9,942)			642,305	9,944	—
Common stock repurchased	370,000	(3)				(870)	(13,554)	(13,557)
Other comprehensive loss, net of tax					(533)			(533)
Balance at May 31, 2017	37,210,091	$ 367	$ 532,705	$ (11,007)	$ (1,324)	(370,000)	$ (5,714)	$ 515,027
Adjustment for ASU 2016-09			199	(199)				—
Net income				16,335				16,335
Exercise of stock options	148,937	1	1,916					1,917
Issuance/cancellation of restricted stock units	145,522	1	(232)					(231)
Issuance of performance share units								—
Purchase of common stock under Employee Stock Purchase Plan	89,943	1	1,262					1,263
Stock-based compensation			7,912					7,912
Other comprehensive income, net of tax					372			372
Balance at May 31, 2018	37,594,493	$ 370	$ 543,762	$ 5,129	$ (952)	(370,000)	$ (5,714)	$ 542,595
Net income				61,340				61,340
Exercise of stock options	134,253	1	1,525					1,526
Issuance/cancellation of restricted stock units	177,538		(667)					(667)
Issuance of performance share units	5,235							—
Purchase of common stock under Employee Stock Purchase Plan	72,863	1	1,171					1,172
Stock-based compensation			9,249					9,249
Other comprehensive loss, net of tax					(400)			(400)
Balance at May 31, 2019	37,984,382	$ 372	$ 555,040	$ 66,469	$ (1,352)	(370,000)	$ (5,714)	$ 614,815

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

AngioDynamics, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Year ended May 31,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	$ 61,340	$ 16,335	$ 5,008
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	25,880	23,163	24,811
Stock based compensation	9,249	7,912	6,183
Gain on disposition	(46,592)	—	—
Transaction costs for disposition	(4,030)	—	—
Change in fair value of contingent consideration	(6,776)	250	(15,261)
Deferred income tax provision	(2,655)	(8,947)	4,428
Changes in accounts receivable allowances	(202)	179	(313)
Fixed and intangible asset impairments and disposals	2,495	540	3,930
Write-off of other assets	—	—	2,685
Other	(5)	(605)	(586)
Changes in operating assets and liabilities:			
Accounts receivable	(3,177)	5,044	8,479
Inventories	(1,428)	5,740	687
Prepaid expenses and other	(1,871)	(1,231)	(3,520)
Accounts payable, accrued and other liabilities	5,212	(7,093)	19,214
Net cash provided by operating activities	37,440	41,287	55,745
Cash flows from investing activities:			
Additions to property, plant and equipment	(3,118)	(2,391)	(3,001)
Proceeds from disposition of discontinued operations	169,242	—	—
Acquisition of businesses, net of cash acquired	(84,920)	—	—
Acquisition of intangibles	—	(1,265)	—
Proceeds from sale or maturity of marketable securities	1,350	—	450
Net cash provided by (used in) investing activities	82,554	(3,656)	(2,551)
Cash flows from financing activities:			
Proceeds from issuance of and borrowings on long-term debt	—	—	116,471
Repayment of long-term debt	(15,000)	(5,000)	(140,381)
Proceeds from borrowings on revolving credit facility	55,000	—	—
Deferred financing costs on long-term debt	—	—	(1,364)
Payment of acquisition related contingent consideration	(8,100)	(9,500)	(9,850)
Repurchase of common stock	—	—	(13,557)
Proceeds from exercise of stock options and employee stock purchase plan	2,031	2,949	10,698
Net cash provided by (used in) financing activities	33,931	(11,551)	(37,983)
Effect of exchange rate changes on cash and cash equivalents	(380)	472	—
Increase in cash and cash equivalents	153,545	26,552	15,211
Cash and cash equivalents at beginning of year	74,096	47,544	32,333
Cash and cash equivalents at end of year	$ 227,641	$ 74,096	$ 47,544

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

AngioDynamics, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS—(Continued)
(in thousands)

	Year ended May 31,		
	2019	2018	2017
Supplemental disclosure of non-cash investing and financing activities:			
Increase (decrease) in accounts payable for purchases of fixed assets	$ (114)	$ 56	$ 26
Fair value of contingent consideration for acquisitions	25,100	—	—
Fair value of acquisition consideration included in accrued expenses	4,650	—	—
Cash paid (received) during the year for:			
Interest	$ 5,115	$ 3,190	$ 2,969
Income taxes	426	36	(102)

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

1. BASIS OF PRESENTATION, BUSINESS DESCRIPTION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation and Description of Business

The consolidated financial statements include the accounts of AngioDynamics, Inc. and its wholly owned subsidiaries, (collectively, the "Company").

The Company designs, manufactures and sells a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for vascular access, for the treatment of peripheral vascular disease and in oncology and surgical settings. The devices are generally used in minimally invasive, image-guided procedures. Most of the Company's products are intended to be used once and then discarded, or they may be temporarily implanted for short- or long-term use.

On May 31, 2019, the Company completed the sale of the Fluid Management business and all of the assets used primarily in connection with the Fluid Management business (Note 3). As the disposal of this business represents a strategic shift with a major effect on the Company's operations, for all periods presented in our Consolidated Statements of Operations and Comprehensive Income, all sales, costs, expenses, gains and income taxes attributable to Fluid Management have been reported under the captions, "Income from Discontinued Operations, Net of Income Tax." Cash flows used in or provided by Fluid Management have been reported in the Consolidated Statements of Cash Flows under operating and investing activities.

Accounting Principles

The consolidated financial statements and accompanying notes have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP").

Principles of Consolidation

The consolidated financial statements include the accounts of AngioDynamics and its subsidiaries (all of which are wholly owned). All intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of financial statements, in conformity with accounting principles generally accepted in the United States of America, requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the consolidated financial statements. Estimates also affect reported amounts of sales and expenses during the reporting period. Actual results could differ from those estimates.

Cash and Cash Equivalents

The Company considers all unrestricted highly liquid investments with an initial maturity of less than three months at the date of purchase to be cash equivalents. The Company maintains cash and cash equivalent balances with financial institutions in the United States in excess of amounts insured by the Federal Deposit Insurance Corporation.

Marketable Securities

Marketable securities, which include auction rate investments, are classified as "available-for-sale securities" and are reported at fair value, with unrealized gains and losses excluded from operations and reported as a component of accumulated other comprehensive income (loss), net of the related tax effects, in stockholders' equity. Cost is determined using the specific identification method.

Fair Value Instruments

The carrying amount of the Company's cash and cash equivalents, accounts receivable, accounts payable and long-term debt approximates fair value due to the short-term nature or market interest rates of these items. The Company bases the fair value of short-term investments on quoted market prices or other relevant information generated by market transactions involving identical or comparable assets. The Company measures and records derivative financial instruments at fair value. See Note 5 for further discussion of financial instruments that are carried at fair value on a recurring and nonrecurring basis.

Accounts Receivable

Accounts receivable, principally trade receivables, are generally due within 30 to 90 days and are stated at amounts due from customers, net of an allowance for estimated sales returns and doubtful accounts. The Company performs ongoing credit evaluations of customers and adjusts credit limits based upon payment history and the customer’s current creditworthiness, as determined by a review of their current credit information. The Company continuously monitors aging reports, collections and payments from customers, and a provision for estimated credit losses is maintained based upon historical experience and any specific customer collection issues that have been identified. While such credit losses have historically been within expectations and the provisions established, the Company cannot guarantee that the same credit loss rates will be experienced in the future. The Company writes off accounts receivable when they are determined to be uncollectible.

Inventories

Inventories are stated at the lower of cost (using the first-in, first-out method) or market. Appropriate consideration is given to deterioration, obsolescence, expiring and other factors in evaluating net realizable value.

Property, Plant and Equipment

Property, plant and equipment are stated at cost, less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets. Refer below for useful lives by category:

	Estimated useful lives
Building and building improvements	39 years
Machinery and equipment	5 to 8 years
Computer software and equipment	3 to 5 years

The Company evaluates property, plant and equipment for impairment periodically to determine if changes in circumstances or the occurrence of events suggest the carrying value of the asset or asset group may not be recoverable. Expenditures for repairs and maintenance are charged to expense as incurred. Renewals and betterments are capitalized.

Goodwill and Intangible Assets

Intangible assets other than goodwill and acquired IP R&D are amortized over their estimated useful lives, on either a straight-line basis or proportionately to the benefit being realized. Useful lives range from two to eighteen years. The Company periodically reviews the estimated useful lives of intangible assets and reviews such assets for impairment whenever events or changes in circumstances indicate that the carrying value of the asset or asset group is not recoverable. If an intangible asset or asset group is considered to be impaired, the amount of the impairment will equal the excess of the carrying value over the fair value of the asset.

Goodwill is the amount by which the cost of acquired net assets in a business combination exceeded the fair value of net identifiable assets on the date of purchase. Goodwill and other intangible assets that have indefinite useful lives are not amortized, but rather, are tested for impairment annually or more frequently if impairment indicators arise.

For goodwill, the impairment test requires a comparison of the estimated fair value of the reporting unit to which the goodwill is assigned to the carrying value of the assets and liabilities of that reporting unit. The determination of reporting units also requires management judgment. The Company considers whether a reporting unit exists within a reportable segment based on the availability of discrete financial information. If the carrying value of the reporting unit exceeds the fair value of the reporting unit, the carrying value of the reporting unit’s goodwill is reduced to its fair value through an adjustment to the goodwill balance, resulting in an impairment charge.

The Company's annual testing for impairment of goodwill was completed as of December 31, 2018. The Company operates as a single operating segment with one reporting unit and consequently evaluates goodwill for impairment based on an evaluation of the fair value of the Company as a whole. The Company determined the fair value of the reporting unit based on the market valuation approach and concluded that it was not more-likely-than-not that the fair value of the Company's reporting unit was less than its carrying value. As a result of the sale of the Fluid Management business, the Company performed an impairment test as of April 17, 2019, the date of the announcement of the deal, which indicated no goodwill impairment.

Contingent Consideration

The fair value of the liability for contingent consideration recorded on the acquisition date for a business combination is based on probability weighted estimated cash flow streams, discounted back to present value using a discount rate determined in accordance with accepted valuation methods and reflective of the risk associated with the estimated cash flow streams. The liability for contingent consideration is remeasured to fair value at each reporting period with changes recorded in earnings until the contingency is resolved.

Revenue Recognition

The Company recognizes revenue when it transfers control of promised goods or services to its customers in an amount that reflects the consideration to which the Company expects to be entitled to in exchange for those goods and services. See Note 4, “Revenue from Contracts with Customers” for further discussion on revenue.

Research and Development

Research and development costs, including salaries, consulting fees, building costs, utilities and administrative expenses that are related to developing new products, enhancing existing products, validating new and enhanced products, managing clinical, regulatory and medical affairs are expensed as incurred.

Income Taxes

The Company calculates income tax expense for each jurisdiction in which it operates. This involves estimating actual current taxes due plus assessing temporary differences arising from differing treatment for tax and accounting purposes that are recorded as deferred tax assets and liabilities. The Company periodically evaluates deferred tax assets, capital loss carryforwards and tax credit carryforwards to determine their recoverability based primarily on the Company's ability to generate future taxable income and capital gains. Where it is more-likely-than-not these will not be recovered, the Company estimates a valuation allowance and records a corresponding additional tax expense in the consolidated statement of operations.

The Company recognizes and measures uncertain tax positions taken or expected to be taken in a tax return utilizing a two-step approach. The Company first determines if the weight of available evidence indicates that it is more likely than not that the tax position will be sustained on audit, including resolution of any related appeals or litigation processes. The second step is that the Company measures the tax benefit as the largest amount that is more likely than not to be realized upon ultimate settlement. The Company recognizes interest and penalties related to uncertain tax positions in the provision for income taxes on the consolidated statements of operations.

Warranty Costs

The Company makes periodic provisions for expected warranty costs. Historically, warranty costs have been insignificant.

Stock Based Compensation

Stock-based compensation expense reflects the fair value of stock-based awards measured at the grant date and recognized over the relevant service period. The expense recognized includes the impact of forfeitures as they occur. The Company estimates the fair value of each stock-based award on the measurement date using either the current market price of the stock, the Black-Scholes option valuation model, or the Monte Carlo Simulation valuation model. The Black-Scholes and

Monte Carlo Simulation valuation models incorporate assumptions as to stock price volatility, the expected life of options or restricted stock units, a risk-free interest rate and dividend yield. The Company recognizes stock-based compensation expense related to options, restricted stock units and market based performance stock units on a straight-line basis over the service period of the award, which is generally 4 years for options and restricted stock units and 3 years for market based performance stock units.

Foreign Currency Translation

The functional currency of the Company's foreign subsidiaries is the local currency in which the subsidiary operates. For foreign operations where the local currency is considered to be the functional currency, the Company translates assets and liabilities into U.S. dollars at the exchange rate on the balance sheet date. The Company translates income and expense items at average rates of exchange prevailing during each period. The Company accumulates translation adjustments in accumulated other comprehensive loss, a component of stockholders’ equity.

Transaction gains or losses that arise from exchange rate fluctuations on transactions denominated in a currency other than the functional currency are included in other expense in the statements of operations as incurred.

Derivative Financial Instruments

The Company is exposed to market risks, including changes in foreign currency and interest rates. The Company periodically enters into certain derivative financial instruments to hedge the underlying economic exposure.

Derivative instruments are presented in the consolidated financial statements at their fair value. Changes in the fair value of derivative financial instruments are either recognized periodically in income or in stockholders’ equity as a component of accumulated other comprehensive income (loss) depending on whether the derivative financial instrument qualifies for hedge accounting and, if so, whether it qualifies as a fair value or cash flow hedge. Generally, the changes in the fair value of derivatives accounted for as fair value hedges are recorded in income along with the portions of the changes in the fair value of hedged items that relate to the hedged risks. Changes in the fair value of derivatives accounted for as cash flow hedges, to the extent they are effective as hedges, are recorded in accumulated other comprehensive income (loss). There were no derivative instruments held by the Company as of May 31, 2019 and 2018.

Contingencies

The Company is subject to various legal proceedings that arise in the ordinary course of business, including patent infringement and product liability matters. The Company records accruals for contingencies when it is probable the liability has been incurred and the amount can be reasonably estimated. Legal fees are expensed as incurred. Insurance recoveries related to potential claims are recognized up to the amount of the recorded liability when coverage is confirmed and the estimated recoveries are probable of payment. These recoveries are not netted against the related liabilities for financial statement presentation.

The following table provides a description of recent accounting pronouncements that may have a material effect on the Company's consolidated financial statements:

Recently Issued Accounting Pronouncements - Adopted

Standard	Description	Date Adopted	Effect on the Consolidated Financial Statements
ASU No. 2014-09, *Revenue from Contracts with Customers (ASU 2014-09)*	This ASU provides a single, comprehensive accounting model for revenues arising from contracts with customers that supersedes most of the existing revenue recognition guidance, including industry-specific guidance. Under this model, revenue is recognized at an amount that an entity expects to be entitled to upon transferring control of goods or services to a customer, as opposed to when risks and rewards transfer to a customer under existing revenue recognition guidance.	June 1, 2018	See Note 4, "Revenue from Contracts with Customers" for the required disclosures related to the impact of adopting this standard. The adoption of this standard did not have a material impact on the Company’s consolidated balance sheets and statements of operations.
ASU No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments (ASU 2016-15)*	This ASU identifies how certain cash receipts and cash payments are presented and classified in the Statement of Cash Flows under Topic 230.	June 1, 2018	This adoption did not have an impact on the Company's financial statements.

Recently Issued Accounting Pronouncements - Not Yet Applicable or Adopted

Standard	Description	Effective Date	Effect on the Consolidated Financial Statements
ASU 2016-02, *Leases (Topic 842)*	This ASU increases transparency and comparability among organizations by recognizing lease assets and liabilities on the balance sheet and disclosing key information about leasing arrangements. For leases with a term of twelve months or less, a lessee is permitted to make an accounting policy election by class of underlying asset not to recognize lease assets and liabilities.	June 1, 2019	On June 1, 2019, the Company adopted ASC 842 and elected the optional transition method to apply the standard as of the effective date and therefore, the Company will not apply the standard to the comparative periods presented in the consolidated financial statements. The Company has elected the transition package of three practical expedients permitted within the standard, which eliminates the requirements to reassess prior conclusions about lease identification, lease classification, and initial direct costs. Further, the Company has elected a short-term lease exception policy, permitting the Company to not apply the recognition requirements of this standard to short-term leases (i.e., leases with terms of 12 months or less) and an accounting policy to account for lease and non-lease components as a single component for certain classes of assets. While the Company is finalizing its evaluation of the impact of the adoption of ASC 842 on its consolidated financial statements and related disclosures, the Company expects to recognize on its balance sheet right-of-use assets ranging from $4.5 to $5.5 million, in aggregate, and lease liabilities ranging from $5.0 to $6.0 million, in aggregate, which are primarily related to the Company's facilities operating leases (Note 17). The difference between the right-of-use assets and lease liabilities is primarily attributed to the elimination of deferred rent. The adoption of ASC 842 is also expected to impact the Company's consolidated financial statement disclosures. The Company does not anticipate the adoption of ASC 842 will have a material impact to the Consolidated Statements of Operations and Statements of Cashflows or to require a cumulative-effect adjustment to the opening balance of retained earnings.

2. ACQUISITIONS

RadiaDyne Acquisition

On September 21, 2018, the Company acquired RadiaDyne, a privately held medical diagnostic and device company that designs and develops patient dose monitoring technology to improve cancer treatment outcomes. The aggregate purchase price of $75.0 million included an upfront payment of $47.9 million, contingent consideration with an estimated fair value of $22.3 million, an indemnification holdback of $4.6 million and a purchase price holdback of $0.2 million. The fair value of contingent consideration of $22.3 million is comprised of $16.5 million for the revenue milestones and $5.8 million for the technical milestones. The $4.6 million indemnification holdback is recorded in accrued liabilities at May 31, 2019 and the $0.2 million purchase price holdback was initially recorded in accrued liabilities, but was paid during the third quarter of fiscal year 2019.

This acquisition expands the Company's growing Oncology business by adding RadiaDyne's early-stage, proprietary OARtrac® real-time radiation dose monitoring platform and other market-leading oncology solutions, including the IsoLoc®/ImmobiLoc® and Alatus® balloon stabilizing technologies.

The Company accounted for the RadiaDyne acquisition under the acquisition method of accounting for business combinations. Accordingly, the cost to acquire the assets was allocated to the underlying net assets in proportion to estimates of their respective fair values. The excess of the purchase price over the estimated fair value of the net assets acquired was recorded as goodwill. Goodwill is deductible for income tax purposes.

The Company has not disclosed the amount of revenue and earnings for sales of RadiaDyne products since acquisition, nor proforma information, because these amounts are not significant to the Company's financial statements. Acquisition-related costs associated with the RadiaDyne acquisition, which are included in acquisition, restructuring and other expenses, net in the accompanying consolidated statements of income, were approximately $1.6 million. The following table summarizes the preliminary and revised aggregate purchase price allocated to the net assets acquired:

(in thousands)	Preliminary allocation	Adjustments (1)	Revised allocation
Accounts receivable	$ 900	$ —	$ 900
Inventory	732	—	732
Prepaid and other current assets	98	—	98
Property, plant and equipment	133	—	133
Intangible assets:			
RadiaDyne trademark	400	—	400
OARtrac trademark	200	—	200
RadiaDyne legacy product technology	1,500	—	1,500
OARtrac product technology	16,300	2,600	18,900
RadiaDyne customer relationships	3,700	900	4,600
Goodwill	51,482	(3,500)	47,982
Total assets acquired	$ 75,445	$ —	$ 75,445
Liabilities assumed			
Accounts payable	$ 352	$ —	$ 352
Accrued expenses	106	—	106
Total liabilities assumed	$ 458	$ —	$ 458
Net assets acquired	$ 74,987	$ —	$ 74,987

(1) Measurement period adjustments are recognized on a prospective basis in the period of change, instead of restating prior periods. There was no impact to reported earnings in connection with these measurement period adjustments for the periods presented. Amounts represent adjustments to the preliminary purchase price allocation first presented in the Company's Quarterly Report on Form 10-Q for the quarter ended November 30, 2018 resulting from revising the Company's purchase price allocation for this acquisition.

The Company finalized the allocation of the purchase price to the assets acquired and liabilities assumed in the fourth quarter of FY19.

The values assigned to the RadiaDyne and OARtrac trademark and product technologies were derived using the relief-from-royalties method under the income approach. This approach is used to estimate the cost savings that accrue for the owner of an intangible asset who would otherwise have to pay royalties or licensing fees on revenues earned through the use of the asset if they had not owned the rights to use the assets. The net after-tax royalty savings are calculated for each year in the remaining economic life of the intangible asset and discounted to present value. The trademarks are deemed to have a useful life of five to seven years and the product technologies are deemed to have a useful life of seven to ten years. Both are amortized on a straight-line basis over their useful life.

The value assigned to customer relationships was derived using the multi-period excess earnings method under the income approach. This approach estimates the excess earnings generated over the lives of the customers that existed as of the acquisition date and discounts such earnings to present value. Customer relationships are amortized on a straight-line basis over fifteen years.

The goodwill arising from the acquisition consists largely of synergies and economies of scale the Company hopes to achieve from combining the acquired assets with the Company's current operations.

BioSentry Acquisition

On August 14, 2018, the Company acquired the BioSentry product from Surgical Specialties, LLC (“SSC”), for an aggregate purchase price of $39.8 million of which $37.0 million was paid on August 14, 2018 and $2.8 million was recorded as contingent consideration. The contingent consideration liability was recorded at fair value and was paid in the fourth quarter of fiscal year 2019 upon fulfillment of hydrogel orders by SSC.

The Company accounted for the BioSentry acquisition under the acquisition method of accounting for business combinations. Accordingly, the cost to acquire the assets was allocated to the underlying net assets in proportion to estimates of their respective fair values. The excess of the purchase price over the estimated fair value of the net assets acquired was recorded as goodwill. Goodwill is deductible for income tax purposes.

The Company has not disclosed the amount of revenue and earnings for sales of BioSentry products since acquisition, nor proforma information, because these amounts are not significant to the Company's financial statements. Acquisition-related costs associated with the BioSentry acquisition, which are included in acquisition, restructuring and other expenses, net in the accompanying consolidated statements of income, were approximately $1.0 million. The following table summarizes the preliminary and revised aggregate purchase price allocated to the net assets acquired:

(in thousands)	Preliminary allocation	Adjustments (1)	Revised allocation
Inventory	$ 50	$ —	$ 50
Property, plant and equipment	10	—	10
Intangible assets:			
BioSentry trademark	1,700	800	2,500
BioSentry product technology	13,800	7,100	20,900
Customer relationships	2,500	100	2,600
Goodwill	21,740	(8,000)	13,740
Net assets acquired	$ 39,800	$ —	$ 39,800

(1) Measurement period adjustments are recognized on a prospective basis in the period of change, instead of restating prior periods. There was no impact to reported earnings in connection with these measurement period adjustments for the periods presented. Amounts represent adjustments to the preliminary purchase price allocation first presented in the Company's Quarterly Report on Form 10-Q for the quarter ended August 31, 2018 resulting from revising the Company's purchase price allocation for this acquisition.

The Company finalized the allocation of the purchase price to the assets acquired and liabilities assumed in the fourth quarter of FY19.

The values assigned to the BioSentry trademark and product technologies were derived using the relief-from-royalties method under the income approach. This approach is used to estimate the cost savings that accrue for the owner of an intangible asset who would otherwise have to pay royalties or licensing fees on revenues earned through the use of the asset if they had not owned the rights to use the assets. The net after-tax royalty savings are calculated for each year in the remaining economic life of the intangible asset and discounted to present value. The trademark and product technologies are deemed to have a fifteen year useful life and are amortized on a straight-line basis over their useful life.

The value assigned to customer relationships was derived using the multi-period excess earnings method under the income approach. This approach estimates the excess earnings generated over the lives of the customers that existed as of the acquisition date and discounts such earnings to present value. Customer relationships are amortized on a straight-line basis over ten years.

The goodwill arising from the acquisition consists largely of synergies and economies of scale the Company hopes to achieve from combining the acquired assets with the Company's current operations.

3. DIVESTITURES

Fluid Management

On May 31, 2019, the Company completed the sale of the NAMIC Fluid Management business (the "Divestiture") and all of the assets used primarily in connection with the Fluid Management business to Medline Industries, Inc. ("Medline") pursuant to an asset purchase agreement dated April 17, 2019 (the "Asset Purchase Agreement"). Total consideration received by the Company for the Divestiture in the fourth quarter of fiscal year 2019 was $169.2 million in cash and resulted in a gain of $46.6 million after working capital adjustments of $0.6 million. The gain is recorded in discontinued operations. On June 3, 2019, a portion of the net proceeds were used to retire the outstanding balance on the Term Loan and Revolving Facility and the remaining net proceeds will continue to be invested in the business.

Pursuant to a transition services agreement entered into and effective on the closing of the transaction, the Company will supply certain services to Medline. Medline will receive certain legal, human resource, tax, accounting and information technology services from the Company for a period generally not to exceed 24 months.

As a result of the Divestiture, the results of operations from the Fluid Management business are reported in the accompanying consolidated statements of operations as "Income from discontinued operations, net of income tax" for the years ended May 31, 2019, 2018 and 2017.

The following table summarizes the financial results of our discontinued operations:

	Year ended May 31,		
(in thousands)	2019	2018	2017
Net sales	$ 88,850	$ 82,630	$ 79,855
Cost of sales (exclusive of amortization)	52,978	49,611	47,636
Gross profit	35,872	33,019	32,219
Operating expenses			
Research and development	1,177	1,121	1,121
Sales and marketing	4,129	4,167	3,954
General and administrative	271	274	273
Amortization of intangibles	2,716	2,729	2,729
Total operating expenses	8,293	8,291	8,077
Operating income	27,579	24,728	24,142
Gain on divestiture	46,592	—	—
Income from discontinued operations before income taxes	74,171	24,728	24,142
Income tax expense	(1,685)	(2,166)	(12,082)
Income from discontinued operations	$ 72,486	$ 22,562	$ 12,060

In accordance with accounting principles generally accepted in the United States ("GAAP"), only expenses specifically identifiable and related to a business to be disposed may be allocated to discontinued operations. As such, the selling and marketing, research and development and general and administrative expenses recorded in discontinued operations include corporate costs incurred directly in support of the Fluid Management portfolio.

The Company applied the "Intraperiod Tax Allocation" rules under ASC 740, which requires the allocation of an entity's total annual income tax provision among continuing operations and, in the Company's case, discontinued operations. Included in the $1.6 million income tax expense for fiscal year 2019 is $0.6 million tax expense related to the gain on the Divestiture. The taxes on the gain were calculated using various state statutory tax rates and are partially offset by the utilization of historical state net operating losses. There are no current federal taxes on the gain due to utilization of historical net operating losses which had a corresponding valuation allowance.

The table below provides a reconciliation of the gain recorded on the sale of the Fluid Management business:

(in thousands)		
Proceeds received from Divestiture	$	169,242
Working capital adjustment		(612)
Fluid Management assets:		
Inventories		11,029
Property, plant and equipment, net		16,624
Intangible assets, net		15,047
Goodwill		75,308
Total Fluid Management assets		118,008
Transaction costs for Divestiture (1)		4,030
Gain on sale of the Fluid Management business before income taxes	$	46,592

(1) Costs include advisory fees, legal fees and professional fees

As a result of the Divestiture, the related assets and liabilities transferred to Medline were reclassified as held for sale in the Consolidated Balance Sheet as of May 31, 2018 based on the nature of the asset or liability.

(in thousands)	May 31, 2018	
Inventories	$	9,642
Total current assets held for sale		9,642
Property, plant and equipment, net		16,746
Intangible assets, net		17,763
Goodwill		75,308
Total non-current assets held for sale		109,817
Total assets held for sale	$	119,459

Proceeds from the sale of Fluid Management have been presented in the Consolidated Statements of Cash Flows under investing activities for the fiscal year ended May 31, 2019. Total operating and investing cash flows of discontinued operations for the fiscal year ended May 31, 2019, 2018 and 2017 are comprised of the following, which exclude the effect of income taxes:

	2019		2018		2017	
(in thousands)						
Net cash provided by operating activities	$	2,245	$	5,581	$	3,968
Net cash provided by investing activities		982		1,146		1,361

4. REVENUE FROM CONTRACTS WITH CUSTOMERS

Adoption of ASC Topic 606 "*Revenue from Contracts with Customers*"

The Company adopted ASC 606, *Revenue from Contracts with Customers* on June 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption. The reported results for fiscal year 2019 reflect the application of ASC 606 guidance while the reported results for fiscal year 2018 were prepared under the guidance of ASC 605, Revenue Recognition (“ASC 605”). For discussion of the Company’s accounting policy for revenue recognition under ASC 605, refer to Item 8 of the Annual Report on Form 10-K for the year ended May 31, 2018. The adoption of ASC 606 did not have an impact on the Company’s consolidated balance sheet, results of operations, equity or cash flows as of the adoption date or for the periods presented, other than the enhanced disclosures included in this footnote.

Revenue Recognition

Under ASC 606, revenue is recognized when a customer obtains control of promised goods or services, in an amount that reflects the consideration which the entity expects to receive in exchange for those goods or services. To determine revenue recognition for arrangements that an entity determines are within the scope of ASC 606, the Company performs the following five steps: (i) identify the contract(s) with a customer; (ii) identify the performance obligations in the contract; (iii) determine the transaction price; (iv) allocate the transaction price to the performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation.

The Company has one primary revenue stream which is the sales of its products.

Disaggregation of Revenue

The following tables summarize net product revenue by Global Business Unit ("GBU") and geography for the year ended May 31, 2019:

	Year ended May 31, 2019		
(in thousands)	United States	International	Total
Net sales			
Vascular Interventions & Therapies	$ 106,767	$ 13,134	$ 119,901
Vascular Access	79,611	15,119	$ 94,730
Oncology	30,579	25,424	$ 56,003
Total	$ 216,957	$ 53,677	$ 270,634

Net Product Revenue

The Company's products consist of a wide range of medical, surgical and diagnostic devices used by professional healthcare providers for vascular access, for the treatment of peripheral vascular disease and for use in oncology and surgical settings. The Company's devices are generally used in minimally invasive, image-guided procedures. Most of the Company's products are intended to be used once and then discarded, or they may be implanted for short or long term use. The Company sells its products to its distribution partners and to end users, such as interventional radiologists, interventional cardiologists, vascular surgeons, urologists, interventional and surgical oncologists and critical care nurses.

Contracts and Performance Obligations

The Company contracts with its customers based on customer purchase orders, which in many cases are governed by master purchasing agreements. The Company’s contracts with customers are generally for product only, and do not include other performance obligations such as services or other material rights. As part of its assessment of each contract, the Company evaluates certain factors including the customer’s ability to pay (or credit risk). For each contract, the Company considers the promise to transfer products, each of which is distinct, to be the identified performance obligations.

Transaction Price and Allocation to Performance Obligations

Transaction prices of products are typically based on contracted rates. Product revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring products to a customer. To the extent the transaction price includes variable consideration, the Company estimates the amount of variable consideration that should be included in the transaction price utilizing the expected value method. As such, revenue is recorded net of rebates, returns and other deductions.

If a contract contains a single performance obligation, the entire transaction price is allocated to the single performance obligation. Contracts that contain multiple performance obligations require an allocation of the transaction price based on the estimated relative standalone selling prices of the promised products underlying each performance obligation. The Company has standard pricing for its products and determines standalone selling prices based on the price at which the performance obligation is sold separately.

Revenue Recognition

Revenue is recognized when control of the product is transferred to the customer (i.e., when the Company’s performance obligation is satisfied), which occurs at a point in time, and may be upon shipment from the Company’s manufacturing site or delivery to the customer’s named location, based on the contractual shipping terms of a contract.

In determining whether control has transferred, the Company considers if there is a present right to payment from the customer and when physical possession, legal title and risks and rewards of ownership have transferred to the customer.

The Company typically invoices customers upon satisfaction of identified performance obligations. As the Company’s standard payment terms are 30 to 90 days from invoicing, the Company does not provide any significant financing to its customers.

Sales, value add, and other taxes collected on behalf of third parties are excluded from revenue.

Variable Consideration

Revenues from product sales are recorded at the net sales price (transaction price), which includes estimates of variable consideration for which reserves are established for discounts, returns, rebates and allowances that are offered within contracts between the Company and its customers. These reserves are based on the amounts earned or to be claimed on the related sales and are classified as a current liability.

Rebates and Allowances: The Company provides certain customers with rebates and allowances that are explicitly stated in the Company’s contracts and are recorded as a reduction of revenue in the period the related product revenue is recognized. The Company establishes a liability for such amounts, which is included in accrued expenses in the accompanying consolidated balance sheets. These rebates and allowances result from performance-based offers that are primarily based on attaining contractually specified sales volumes and administrative fees the Company is required to pay to group purchasing organizations.

Product Returns: The Company generally offers customers a limited right of return. Product returns after 30 days must be pre-approved by the Company and customers may be subject to a 20% restocking charge. To be accepted, a returned product must be unadulterated, undamaged and have at least twelve months remaining prior to its expiration date. The Company estimates the amount of its product sales that may be returned by its customers and records this estimate as a reduction of revenue in the period the related product revenue is recognized. The Company currently estimates product return liabilities using its historical product return information and considers other factors that it believes could significantly impact its expected returns, including product recalls. During the year ended May 31, 2019, such product returns were not material.

Contract Balances with Customers

A receivable is recognized in the period the Company ships the product. Payment terms on invoiced amounts are based on contractual terms with each customer and generally coincide with revenue recognition. Accordingly, the Company does not have any contract assets associated with the future right to invoice its customers. In some cases, if control of the product has not yet transferred to the customer or the timing of the payments made by the customer precedes the Company’s fulfillment of the performance obligation, the Company recognizes a contract liability that is included in deferred revenue in the accompanying consolidated balance sheets.

The following table presents changes in the Company's receivables, contract assets and contract liabilities with customers:

(in thousands)	May 31, 2019	May 31, 2018
Receivables	$ 43,577	$ 39,401
Contract assets	$ —	$ —
Contract liabilities	$ 681	$ 1,203

During the year ended May 31, 2019, the Company recognized $1.1 million in revenue that was included in contract liabilities as of the beginning of the period. This was offset by additions to contract liabilities of $0.6 million .

Costs to Obtain or Fulfill a Customer Contract

Under ASC 606, the Company recognizes an asset for incremental costs of obtaining a contract with a customer if it expects to recover those costs. The Company's sales incentive compensation plans qualify for capitalization since these plans are directly related to sales achieved during a period of time. However, the Company has elected the practical expedient under ASC 340-40-25-4 to expense the costs as they are incurred within selling and marketing expenses since the amortization period is less than one year.

The Company accounts for shipping and handling activities related to contracts with customers as costs to fulfill the promise to transfer the associated products. Shipping and handling costs, associated with the distribution of finished products to customers, are recorded in costs of goods sold and are recognized when the related finished product is shipped to the customer. Amounts charged to customers for shipping are recorded in net sales.

5. FAIR VALUE OF FINANCIAL INSTRUMENTS

On a recurring basis, the Company measures certain financial assets and financial liabilities at fair value based upon quoted market prices, where available. Where quoted market prices or other observable inputs are not available, the Company applies valuation techniques to estimate fair value. FASB ASC Topic 820, *Fair Value Measurements and Disclosures*, establishes a three-level valuation hierarchy for disclosure of fair value measurements. The categorization of financial assets and financial liabilities within the valuation hierarchy is based upon the lowest level of input that is significant to the measurement of fair value. The three levels of the hierarchy are defined as follows:

- Level 1 - Inputs to the valuation methodology are quoted market prices for identical assets or liabilities.
- Level 2 - Inputs to the valuation methodology are other observable inputs, including quoted market prices for similar assets or liabilities and market-corroborated inputs.
- Level 3 - Inputs to the valuation methodology are unobservable inputs based on management's best estimate of inputs market participants would use in pricing the asset or liability at the measurement date, including assumptions about risk.

The Company's financial instruments include cash and cash equivalents, marketable securities, accounts receivable, accounts payable and contingent consideration. The carrying amount of cash and cash equivalents, accounts receivable, and accounts payable approximates fair value due to their immediate or short-term maturities. The recurring fair value measurements using significant unobservable inputs (Level 3) relate to marketable securities, which are comprised of auction rate securities, and contingent consideration liabilities.

The following tables provide information by level for assets and liabilities that are measured at fair value on a recurring basis:

(in thousands)	Fair Value Measurements using inputs considered as: Level 1	Level 2	Level 3	Fair Value at May 31, 2019
Financial Liabilities				
Contingent liability for acquisition earn outs	$ —	$ —	$ 13,486	$ 13,486
Total Financial Liabilities	$ —	$ —	$ 13,486	$ 13,486

(in thousands)	Fair Value Measurements using inputs considered as: Level 1	Level 2	Level 3	Fair Value at May 31, 2018
Financial Assets				
Short-term investments (1)	$ 2,100	$ —	$ —	$ 2,100
Marketable Securities	—	—	1,317	1,317
Total Financial Assets	$ 2,100	$ —	$ 1,317	$ 3,417
Financial Liabilities				
Contingent liability for acquisition earn out	$ —	$ —	$ 3,261	$ 3,261
Total Financial Liabilities	$ —	$ —	$ 3,261	$ 3,261

(1) Included in cash and cash equivalents.

There were no transfers in and out of Level 1, 2 and 3 measurements for the years ended May 31, 2019 and 2018.

The table below presents the changes in fair value components of Level 3 instruments in the year ended May 31, 2019 (in thousands of dollars):

	Financial Assets	Financial Liabilities
(in thousands)	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at May 31, 2018	$ 1,317	$ 3,261
Contingent consideration liabilities recorded as the result of acquisitions (Note 2)	—	25,101
Change in present value of contingent consideration (1)	—	(6,776)
Fair market value adjustments	33	—
Proceeds from sale of marketable securities	(1,350)	—
Contingent consideration payments	—	(8,100)
Balance at May 31, 2019	$ —	$ 13,486

(1) Change in the fair value of contingent consideration is included in earnings and comprised of changes in estimated earn out payments based on projections of Company performance and amortization of the present value discount.

In the fourth quarter of fiscal year 2019, the Company revised the sales projections for RadiaDyne products as a result of reviews performed by executive management. The adjustments to the sales projections resulted in a $8.4 million gain in the fourth quarter of fiscal year 2019 from the reduction in the fair value of the contingent liability which was based on lower projected sales volume over the contractual earn out period.

The table below presents the changes in fair value components of Level 3 instruments in the year ended May 31, 2018 (in thousands of dollars):

(in thousands)	Financial Assets Fair Value Measurements Using Significant Unobservable Inputs (Level 3)	Financial Liabilities Fair Value Measurements Using Significant Unobservable Inputs (Level 3)
Balance at May 31, 2017	$ 1,215	$ 12,761
Change in fair value of contingent consideration (1)	—	250
Fair market value adjustments	102	—
Contingent consideration payments	—	(9,750)
Balance at May 31, 2018	$ 1,317	$ 3,261

(1) Change in the fair value of contingent consideration is included in earnings and comprised of changes in estimated earn out payments based on projections of Company performance and amortization of the present value discount.

Short-term Investments

Short-term investments consist of highly liquid investments in municipal bonds that reset on a weekly basis and can be called at any point in time.

Marketable Securities

Marketable securities consist solely of an auction rate security. Assumptions associated with the auction rate security include the interest rate benchmarks, the probability of full repayment of the principal considering the credit quality and guarantees in place, and the rate of return required by investors to own such securities given the current liquidity risk.

Contingent Liability for Acquisition Earn Outs

Some of our business combinations involve the potential for the payment of future contingent consideration upon the achievement of certain product development milestones or various other performance conditions. Payment of the additional consideration is generally contingent on the acquired company reaching certain performance milestones, including attaining specified revenue levels or product development targets. Contingent consideration is recorded at the estimated fair value of the contingent payments on the acquisition date. The fair value of the contingent consideration is remeasured at the estimated fair value at each reporting period with the change in fair value recognized as income or expense within change in fair value of contingent consideration in the consolidated statements of income.

We measure the initial liability and remeasure the liability on a recurring basis using Level 3 inputs as defined under authoritative guidance for fair value measurements and is determined using a discounted cash flow model applied to projected net sales, using probabilities of achieving projected net sales and projected payment dates. Projected net sales are based on our internal projections and extensive analysis of the target market and the sales potential. Increases or decreases in any valuation inputs in isolation may result in a significantly lower or higher fair value measurement in the future.

The recurring Level 3 fair value measurements of the contingent consideration liabilities include the following significant unobservable inputs as of May 31, 2019:

(in thousands)	Fair Value	Valuation Technique	Unobservable Input	Range
Revenue based payments	$ 10,058	Discounted cash flow	Discount rate	4% - 5%
			Probability of payment	66% - 100%
			Projected fiscal year of payment	2020 - 2023
Technical milestones	3,428	Estimated probability	Estimated probability	90%
			Projected year of payment	2020
	$ 13,486			

At May 31, 2019, the range of estimated potential amount of undiscounted future contingent consideration that the Company expects to pay as a result of all completed acquisitions is approximately $15.2 million to $35.2 million. The milestones, including revenue projections and technical milestones, associated with the contingent consideration must be reached in future periods ranging from fiscal years 2019 to 2023 in order for the associated consideration to be paid.

6. MARKETABLE SECURITIES

As of May 31, 2019, there were no marketable securities and as of May 31, 2018, marketable securities consisted of the following:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
(in thousands)				
Available-for-sales securities:				
New York State government agency obligations	$ 1,350	$ —	$ (33)	$ 1,317
	$ 1,350	$ —	$ (33)	$ 1,317

7. INVENTORIES

As of May 31, 2019 and 2018, inventories consisted of the following:

	May 31, 2019	May 31, 2018
(in thousands)		
Raw materials	$ 16,045	$ 15,247
Work in process	6,786	6,656
Finished goods	17,240	17,371
Total	$ 40,071	$ 39,274

The Company periodically reviews its inventory for both obsolescence and loss of value. The Company makes assumptions about the future demand for and market value of the inventory. Based on these assumptions, the Company estimates the amount of obsolete, expiring and slow moving inventory. The total inventory reserve at May 31, 2019 and 2018 was $4.2 million and $5.8 million, respectively. Of the $4.2 million reserve at May 31, 2019, $0.4 million relates to the inventory reserve for Acculis inventory as a result of the recall announced in the fourth quarter of fiscal year 2017 and $0.7 million relates to a specific reserve related to the termination of an agreement with a Japanese distributor in the second quarter of fiscal year 2018. Of the $5.8 million in the prior year, $1.6 million relates to the reserve for Acculis inventory and $0.7 million relates to a specific reserve related to the termination of an agreement with a Japanese distributor in the second quarter of fiscal year 2018.

8. PREPAID EXPENSES AND OTHER

As of May 31, 2019 and 2018, prepaid expenses and other consisted of the following:

	May 31, 2019	May 31, 2018
(in thousands)		
Software licenses	$ 1,131	$ 1,043
License fees	145	143
Trade shows	213	223
Rent	199	134
Other prepaid taxes	112	254
Other	2,203	2,505
Total	$ 4,003	$ 4,302

9. PROPERTY, PLANT AND EQUIPMENT, NET

As of May 31, 2019 and 2018, property, plant and equipment are summarized as follows:

(in thousands)	May 31, 2019	May 31, 2018
Building and building improvements	$ 24,535	$ 24,509
Machinery and equipment	14,029	13,308
Computer software and equipment	24,980	24,459
Construction in progress	1,239	1,666
	64,783	63,942
Less accumulated depreciation and amortization	(41,608)	(39,290)
	23,175	24,652
Land and land improvements	1,083	1,063
	$ 24,258	$ 25,715

Depreciation expense for fiscal years 2019, 2018 and 2017 was $3.1 million, $3.4 million and $4.8 million, respectively.

10. GOODWILL AND INTANGIBLE ASSETS

The Company's annual testing for impairment of goodwill was completed as of December 31, 2018. The Company operates as a single operating segment with one reporting unit and consequently evaluates goodwill for impairment based on an evaluation of the fair value of the Company as a whole. The Company determines the fair value of the reporting unit based on the market valuation approach and concluded that it was not more-likely-than-not that the fair value of the Company's reporting unit was less than its carrying value.

Even though the Company determined that there was no goodwill impairment as of May 31, 2019, the future occurrence of a potential indicator of impairment, such as a significant adverse change in legal, regulatory, business or economic conditions or a more-likely-than-not expectation that the reporting unit or a significant portion of the reporting unit will be sold or disposed of, would require an interim assessment for the reporting unit prior to the next required annual assessment as of December 31, 2019.

As a result of the sale of the Fluid Management business, the Company performed an impairment test as of April 17, 2019, the date of the announcement of the deal. The Company continues to operate as a single operating segment with one reporting unit and consequently evaluates goodwill for impairment based on an evaluation of the fair value of the Company as a whole. The Company determines the fair value of the reporting unit based on the market valuation approach and concluded that it was not more-likely-than-not that the fair value of the Company's reporting unit was less than its carrying value. The Company continued to assess for potential impairment through May 31, 2019 and noted no other events that would be considered a triggering event.

The changes in the carrying amount of goodwill for the year ended May 31, 2019 were as follows:

(in thousands)	
Goodwill balance at May 31, 2018, before adjustment to conform goodwill to current presentation	$ 361,252
Goodwill associated with the Fluid Management divestiture (Note 3)	(75,308)
Goodwill balance at May 31, 2018	285,944
Additions for BioSentry acquisition (Note 2)	13,740
Additions for RadiaDyne acquisition (Note 2)	47,982
Goodwill balance at May 31, 2019	$ 347,666

As of May 31, 2019 and 2018, intangible assets consisted of the following:

(in thousands)	May 31, 2019 Gross carrying value	Accumulated amortization	Net carrying value
Product technologies	$ 182,971	$ (75,412)	$ 107,559
Customer relationships	60,166	(25,950)	34,216
Trademarks	9,300	(6,404)	2,896
Licenses	5,752	(5,036)	716
	$ 258,189	$ (112,802)	$ 145,387

(in thousands)	May 31, 2018 Gross carrying value	Accumulated amortization	Net carrying value
Product technologies	$ 141,675	$ (64,153)	$ 77,522
Customer relationships	55,028	(22,794)	32,234
Trademarks	6,200	(5,642)	558
Licenses	5,752	(4,357)	1,395
Distributor relationships	1,250	(412)	838
	$ 209,905	$ (97,358)	$ 112,547

Amortization expense was $17.1 million, $13.9 million and $14.6 million for fiscal years 2019, 2018 and 2017, respectively.

Annual amortization of these intangible assets is expected to approximate the following amounts for each of the next five fiscal years:

(in thousands)	
2020	$ 15,248
2021	14,021
2022	13,405
2023	13,368
2024	11,812
2025 and thereafter	77,533
	$ 145,387

11. INCOME TAXES

The components of loss from continuing operations before income tax (benefit) expense are as follows:

(in thousands)	Year ended May 31, 2019	2018	2017
Loss from continuing operations before tax expense:			
U.S.	$ (15,593)	$ (18,454)	$ (15,317)
Non-U.S.	891	1,191	1,022
	$ (14,702)	$ (17,263)	$ (14,295)

Income tax (benefit) expense is comprised of the following:

(in thousands)	Year ended May 31, 2019	2018	2017
Current			
Federal	$ —	$ (148)	$ —
State and local	128	152	141
Non U.S.	289	73	270
	417	77	411
Deferred	(3,973)	(11,113)	(7,654)
Income tax benefit	$ (3,556)	$ (11,036)	$ (7,243)

Temporary differences that give rise to deferred tax assets and liabilities are summarized as follows:

(in thousands)	May 31, 2019	May 31, 2018
Deferred tax assets		
Net operating loss carryforward	$ 18,955	$ 33,880
Stock-based compensation	3,395	2,421
Federal and state R&D tax credit carryforward	4,259	3,644
Inventories	971	1,550
Expenses incurred not currently deductible	1,337	1,714
Accrued liabilities	139	277
Gross deferred tax asset	29,056	43,486
Deferred tax liabilities		
Excess tax over book depreciation and amortization	31,878	34,044
	31,878	34,044
Valuation Allowance	(11,688)	(26,607)
Net deferred tax liability (1)	$ (14,510)	$ (17,165)

(1) Net deferred tax liability is inclusive of a non-U.S. deferred tax asset that is included in other assets on the Company's balance sheet for the years ended May 31, 2019 and May 31, 2018 in the amount of $0.32 million and $0.08 million, respectively.

The net deferred tax liability as of May 31, 2019 and 2018 principally relates to tax amortization of intangibles that have an indefinite reversal period for book purposes, also known as a “naked credit deferred tax liability”, that cannot be considered as a source of income to recover the deferred tax asset.

The Company's Federal net operating loss carryforwards as of May 31, 2019 after considering IRC Section 382 limitations are $90.1 million. The expiration of the Federal net operating loss carryforwards are as follows: $8.6 million between 2022 and 2023, $81.2 million between 2028 and 2037 and $0.3 million indefinitely.

The Company's state net operating loss carryforwards as of May 31, 2019 after considering remaining IRC Section 382 limitations are $8.0 million which expire in various years from 2019 to 2038.

On December 22, 2017, the U.S. Tax Cuts and Jobs Act (the “Tax Reform Act”) was signed into law. The Tax Reform Act significantly revised the U.S. corporate income tax regime by, among other things, lowering the U.S. corporate tax rate from 35% to 21% effective January 1, 2018, implementing a territorial tax system, expanding the tax base and imposing a tax on deemed repatriated earnings of foreign subsidiaries. U.S. GAAP requires that the impact of tax legislation be recognized in the period in which the law was enacted.

In December 2017, the Securities and Exchange Commission staff issued Staff Accounting Bulletin No. 118 (SAB 118), which addresses how a company recognizes provisional amounts when a company does not have the necessary information available, prepared or analyzed (including computations) in reasonable detail to complete its accounting for the effect of the changes in the Tax Reform Act. The measurement period ends when a company has obtained, prepared and analyzed the information necessary to finalize its accounting, but cannot extend beyond one year. The Company elected to apply the measurement period guidance provided in SAB 118. The accounting for all of the enactment-date income tax effects of the Tax Reform Act was completed and any changes are noted below.

The Tax Reform Act imposed a one-time transition tax on the deemed repatriation of post-1986 undistributed foreign subsidiaries' earnings. Based on the information available as of December 31, 2017, the Company estimated undistributed foreign earnings of approximately $4.9 million. Upon further analysis and refinement of the calculation during the 12 months ended February 28, 2019, the Company adjusted its provisional amount by $1.1 million to $3.8 million. The taxable income of $3.8 million arising from this deemed repatriation will result in the utilization of net operating loss carryforwards, offset by changes in the valuation allowance, resulting in no net impact to tax expense. All other previously communicated tax impacts remain unchanged and complete.

The Tax Reform Act also creates a new requirement that certain income earned by foreign subsidiaries ("GILTI"), must be included in U.S. gross income. The FASB allows an accounting policy election of either recognizing deferred taxes for temporary differences expected to reverse as GILTI in future years or recognizing such taxes as a current period expense when incurred. The Company has elected to account for the GILTI tax as a current-period expense when incurred (the "period cost method").

Beginning in 2018, except for GILTI, the Company will no longer record United States federal income tax on its share of the income of its foreign subsidiaries, nor will it record a benefit for foreign tax credits related to that income. Upon distribution of these earnings in the form of dividends or otherwise, the Company would be subject to withholding taxes payable, where applicable, to foreign countries, but would have no further federal income tax liability.

The Company regularly assesses its ability to realize its deferred tax assets. Assessing the realization of deferred tax assets requires significant management judgment. In determining whether its deferred tax assets are more likely than not realizable, the Company evaluated all available positive and negative evidence, and weighted the evidence based on its objectivity. Evidence the Company considered included its history of net operating losses, which resulted in the Company recording a full valuation allowance for its deferred tax assets in fiscal year 2016, except the naked credit deferred tax liability.

Based on the review of all available evidence, the Company determined that it has not yet attained a sustained level of profitability and the objectively verifiable negative evidence outweighed the positive evidence. Therefore, the Company has provided a valuation allowance on its federal and state net operating loss carryforwards, federal and state R&D credit carryforwards and other net deferred tax assets that have a limited life and are not supportable by the naked credit deferred tax liability sourced income as of May 31, 2019. The Company will continue to assess the level of the valuation allowance required. If sufficient positive evidence exists in future periods to support a release of some or all of the valuation allowance, such a release would likely have a material impact on the Company's results of operations.

The Company's consolidated income tax expense has differed from the amount that would be provided by applying the U.S. Federal statutory income tax rate to the Company's income before income taxes for the following reasons:

(in thousands)	Year ended May 31, 2019	2018	2017
Income tax benefit at federal statutory tax rate of 21.0%, 28.6% and 35.0%, respectively	$ (3,087)	$ (4,941)	$ (5,003)
Effect of graduated tax rates	—	—	143
State income taxes, net of Federal tax benefit	(177)	120	(505)
Impact of Non-U.S. operations	76	(288)	403
Research and development tax credit	(936)	(951)	(403)
Impact of tax reform	—	12,860	—
Meals and entertainment	190	242	266
Non-deductible interest on contingent payments	—	—	174
Non-taxable gain on revaluation of contingent consideration liability	—	—	(5,576)
Change in valuation allowance	175	(18,526)	2,749
Effect of elimination of stock compensation APIC pool	—	—	1,380
IPR&D intangible write-off	—	—	(1,224)
Other	203	448	353
Income tax benefit	$ (3,556)	$ (11,036)	$ (7,243)

The following table provides a reconciliation of the beginning and ending amount of unrecognized tax benefits:

(in thousands)	Year ended May 31, 2019	2018	2017
Unrecognized tax benefits balance at June 1	$ 464	$ 899	$ 899
Decrease in gross amounts of tax positions related to prior years due to U.S. tax reform	—	(287)	—
Decrease due to lapse in statute of limitations	—	(148)	—
Unrecognized tax benefits balance at May 31	$ 464	$ 464	$ 899

The table above includes unrecognized tax benefits associated with the calculation of limitations placed on the utilization of tax attributes related to an acquired company. If recognized, $0.5 million would result in adjustments to other tax accounts.

The Company recognizes interest and penalties related to unrecognized tax benefits as a component of income tax expense. There are no accrued interest and penalties recognized in the consolidated balance sheet as of May 31, 2019 and May 31, 2018.

The Company files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions. In the normal course of business the Company is subject to examination by taxing authorities throughout the world. Fiscal years 2016 through 2019 remain open to examination by the various tax authorities.

The Company does not anticipate that the amount of unrecognized tax benefits will significantly change in the next twelve months.

12. ACCRUED LIABILITIES

As of May 31, 2019 and 2018, accrued liabilities consist of the following:

(in thousands)	May 31, 2019	May 31, 2018
Payroll and related expenses	$ 14,987	$ 10,235
Royalties	2,088	1,537
Accrued severance	504	1,940
Sales and franchise taxes	807	683
Outside services	3,514	2,396
Litigation matters (Note 17)	2,700	12,500
Indemnification holdback	4,807	—
Other	8,931	5,135
Total	$ 38,338	$ 34,426

13. LONG-TERM DEBT

On November 7, 2016, the Company entered into a Credit Agreement with the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A. and KeyBank National Association as co-syndication agents, and JPMorgan Chase Bank, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated and KeyBank National Association as joint bookrunners and joint lead arrangers.

The Credit Agreement provides for a $100.0 million senior secured term loan facility and a $150.0 million senior secured revolving credit facility, which includes up to a $20.0 million sublimit for letters of credit and a $5.0 million sublimit for swingline loans.

On November 7, 2016, the Company borrowed $100.0 million under the Term Loan and approximately $16.5 million under the Revolving Facility to repay the balance of $116.5 million under the former credit agreement. As of May 31, 2019 and 2018 the carrying value of long-term debt approximates its fair market value.

The proceeds of the Revolving Facility may be used for general corporate purposes of the Company and its subsidiaries. The Facilities have a five year maturity. Interest on both the Term Loan and Revolving Facility are based on a base rate or Eurodollar rate plus an applicable margin which increases as total leverage ratio increases, with the base rate and Eurodollar rate having ranges of 0.50% to 1.25% and 1.50% to 2.25% respectively. In case of default, the interest rate may be increased by 2.0%. The Revolving Facility carries a commitment fee of 0.20% to 0.35% per annum on the unused portion. The interest rate on the Term Loan at May 31, 2019 was 3.94%.

The Company's obligations under the Facilities are unconditionally guaranteed, jointly and severally, by the Company's material direct and indirect domestic subsidiaries (the “Guarantors”). All obligations of the Company and the Guarantors under the Facilities are secured by first priority security interests in substantially all of the assets of the Company and the Guarantors.

The Credit Agreement includes customary representations, warranties and covenants, and acceleration, indemnity and events of default provisions, including, among other things, two quarterly financial covenants as follows:

- maximum leverage ratio of consolidated total indebtedness* to consolidated EBITDA* of not greater than 3.50 to 1.00 (during certain periods following material acquisitions shall be increased to 3.75 to 1.00).

- fixed charge coverage ratio of consolidated EBITDA minus consolidated capital expenditures to consolidated interest expense paid or payable in cash plus scheduled principal payments in respect of indebtedness under the Credit Agreement of not less than 1.25 to 1.00.

* The definitions of consolidated total indebtedness and consolidated EBITDA are maintained in the credit agreement included as an exhibit to Form 8-k filed on November 10, 2016 and in Amendment One, dated May 24, 2018 and included as an exhibit to the fiscal year 2018 Form 10-K. This amendment increased the amount of U.S. cash that can be utilized to calculate net debt from $10.0 million to $20.0 million.

Refer to Note 22 for the new Credit Agreement, including updated debt covenants, that was entered into on June 3, 2019. These debt covenants were applicable for the year ended May 31, 2019. The Company was in compliance with both of those covenants as of May 31, 2019.

The Company's maturities of principal obligations under the credit agreement are as follows, as of May 31, 2019:

(in thousands)	
2020	7,500
2021	11,250
2022	68,750
Total term loan	87,500
Revolving facility	45,000
Total debt	132,500
Less: Unamortized debt issuance costs	(593)
Total	131,907
Less: Current portion of long-term debt	(7,500)
Total long-term debt, net of current portion	$ 124,407

14. RETIREMENT PLANS

The Company has a 401(k) plan under which eligible employees can defer a portion of their compensation, part of which is matched by the Company. Matching contributions were $3.6 million, $3.9 million and $4.2 million in 2019, 2018 and 2017, respectively. There are also various immaterial foreign retirement plans.

15. STOCKHOLDERS’ EQUITY

Capitalization

On October 29, 2014, the Board of Directors approved the Amended and Restated Certificate of Incorporation (the “Amended Certificate”). Under the Amended Certificate, the authorized capital stock is 80,000,000 shares, consisting of 75,000,000 shares of common stock, par value $.01 per share and 5,000,000 shares of preferred stock, par value $.01 per share.

The holders of common stock are entitled to one vote for each share held. Subject to preferences applicable to any outstanding shares of preferred stock, the holders of common stock are entitled to receive ratably dividends, if any, as may be declared by the Board of Directors out of funds legally available for dividend payments. If the Company liquidates, dissolves, or winds up, the holders of common stock are entitled to share ratably in all assets remaining after payment of liabilities and liquidation preferences of any outstanding shares of preferred stock. Holders of common stock have no pre-emptive rights or rights to convert their common stock into any other securities. There are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of 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 the Company may designate in the future.

The Board of Directors has the authority to (i) issue the undesignated preferred stock in one or more series, (ii) determine the powers, preferences and rights and the qualifications, limitations or restrictions granted to or imposed upon any wholly un-issued series of undesignated preferred stock and (iii) fix the number of shares constituting any series and the designation of the series, without any further vote or action by the Company's stockholders.

Stock Options

2004 Stock and Incentive Award Plan

The 2004 Stock and Incentive Award Plan (the "2004 Plan") provides for the grant of incentive options to employees and for the grant of non-statutory stock options, restricted stock, stock appreciation rights, performance units, performance shares and other incentive awards to employees, directors and other service providers. A total of 7,750,000 shares of common stock have been reserved for issuance under the 2004 Plan, of which up to 800,000 shares may be issued upon the exercise of incentive stock options. The Compensation Committee of the Board of Directors administers the 2004 Plan. The Committee determines vesting terms and the exercise price of options granted under the 2004 Plan, but for all incentive stock options the exercise price must at least be equal to the fair market value of common stock on the date of grant. The term of an incentive stock option may not exceed ten years.

On October 25, 2016, the Company amended the 2004 Stock and Incentive Award Plan to increase the shares of common stock reserved for issuance by 250,000 shares. On October 10, 2018, the Company amended the 2004 Stock and Incentive Award Plan to increase the shares of common stock reserved for issuance by 750,000 shares.

As of May 31, 2019, there remained approximately 2.1 million shares available for granting under the 2004 Plan.

The following table summarizes information about stock option activity for the fiscal year ended May 31, 2019:

	Shares	Weighted-average exercise price	Weighted average remaining contractual life	Aggregate intrinsic value (in thousands)
Outstanding at beginning of year - June 1, 2018	1,696,413	$ 15.42		
Granted	391,264	$ 20.71		
Exercised	(184,168)	$ 14.32		
Forfeited	(143,196)	$ 17.52		
Expired	—	$ —		
Outstanding at end of year - May 31, 2019	1,760,313	$ 16.54	5.76	$ 4,672
Options exercisable at year-end	831,924	$ 15.09	3.90	$ 3,092
Options expected to vest in future periods	928,389	$ 17.83	7.43	$ 1,579

Stock options are granted at exercise prices equal to the quoted market price of common stock at the date of the grant. Options vest 25% per year over four years for employees. Grants to directors vest 33.33% per year over three years. Stock options granted prior to May 1, 2007 and after June 1, 2017 expire on the tenth anniversary of the grant date. Stock options granted between May 1, 2007 through May 31, 2017 expire on the seventh anniversary of the grant date.

The Company measures the fair value of each stock option grant at the date of grant using a Black-Scholes option pricing model. The weighted average grant-date fair value of options granted during the years ended May 31, 2019, 2018 and 2017 was $6.53, $4.95, and $4.70, respectively. The following assumptions were used in arriving at the fair value of options granted during 2019, 2018 and 2017, respectively: risk-free interest rates of 2.78%, 2.08% and 1.30%; expected volatility of 31%, 30%, and 31%; and expected lives of 4.79 years, 4.72 years, and 4.80 years. The Company does not declare dividends therefore a dividend yield of zero was used for the years ended May 31, 2019, 2018 and 2017. Risk-free interest rates reflect the yield on zero-coupon U.S. Treasury bonds whose maturity period equals the expected term of the option. Expected volatilities are based on the historical volatility of the Company's stock. The expected option lives are based on historical experience of employee exercise behavior.

The total intrinsic value of options exercised during the years ended May 31, 2019, 2018 and 2017 was $1.4 million, $0.7 million, and $2.8 million, respectively. As of May 31, 2019, there was $3.9 million of total unrecognized compensation cost related to non-vested options, which is expected to be recognized over a weighted average period of 3 years.

Cash received from option exercises during 2018, 2017 and 2016 was $1.5 million, $2.0 million and $9.9 million, respectively. Due to the valuation allowance there was no tax benefit realized from stock option exercises during the years ended May 31, 2019, 2018 and 2017.

Performance Share and Restricted Stock Unit Awards

The Company grants restricted stock units to certain employees under the 2004 Plan which give the recipients the right to receive shares of Company stock upon vesting. The restricted stock unit awards vest in four equal annual installments beginning on the first anniversary of the grant date. Restricted stock unit awards granted to directors vest over one year. Unvested restricted stock unit awards will be forfeited if the recipient ceases to be employed by the Company.

The following table summarizes information about restricted stock unit activity for the year ended May 31, 2019:

	Restricted Stock Units	Weighted Average Grant-Date Fair Value
Non-vested at beginning of year, June 1, 2018	474,502	$ 16.23
Granted	244,405	$ 20.87
Vested	(210,865)	$ 21.69
Canceled	(77,106)	$ 17.98
Non-vested at end of year, May 31, 2019	430,936	$ 18.60

The fair value of each restricted stock unit is the market price of Company stock on the date of grant. The weighted average grant date fair value of restricted stock units granted during the years ended May 31, 2019, 2018 and 2017 was $20.87, $16.60 and $16.54, respectively. The total intrinsic value of restricted stock units (meaning the fair value of the units on the date of vest) vesting during the years ended May 31, 2019, 2018 and 2017 was $4.6 million, $2.7 million, and $2.9 million, respectively. As of May 31, 2019, there was $5.2 million of total unrecognized compensation cost related to non-vested restricted stock awards, which is expected to be recognized over a weighted average period of 3 years.

The Company grants performance share awards to certain employees under the 2004 Plan which gives the recipients the right to receive shares of Company stock if certain criteria is met. The performance criteria is established by the compensation committee for vesting of the performance share awards and is determined by the achievement of relative total shareholder return ("TSR"). Performance share awards are subject to additional conditions, including the recipient’s continued employment with the Company.

The following table summarizes information about performance unit award activity for the year ended May 31, 2019:

	Performance Unit Awards	Weighted Average Grant-Date Fair Value
Non-vested at beginning of year, June 1, 2018	451,856	$ 19.75
Granted	126,356	$ 28.62
Vested	(7,803)	$ 20.50
Canceled	(31,804)	$ 24.03
Non-vested at end of year, May 31, 2019	538,605	$ 21.55

During fiscal years 2019, 2018 and 2017, we granted performance unit awards that include a three-year market condition. Vesting of the performance unit awards is based on the Company's level of attainment of specified total shareholder return ("TSR") targets relative to the percentage appreciation of a specified index of companies for the respective three-year periods. It is also subject to the continued employment of the grantees. In order to estimate the fair value of such awards, we used a Monte Carlo Simulation valuation model on the date of the grant. For the years ended May 31, 2019, 2018 and 2017, the weighted average grant date fair market value for new grants was $28.62, $23.83 and $22.61, respectively. Compensation cost is recognized over the performance period which is typically three years. As of May 31, 2019, 0.5 million performance share units with a weighted average remaining contractual term of 1 year and $3.5 million of unrecognized compensation cost were outstanding.

Compensation Expense

The following tables represents the break out of share-based compensation included in the Company's consolidated statement of operations:

	Year ended May 31,		
(in thousands)	2019	2018	2017
Cost of sales	$ 461	$ 119	$ 299
Research and development	724	554	314
Sales and marketing	1,952	1,778	1,762
General and administrative	6,112	5,461	4,026
Acquisition, restructuring and other items, net	—	—	(218)
	$ 9,249	$ 7,912	$ 6,183

The income tax benefit on the compensation expense recognized for all share-based compensation arrangements was $2.1 million, $1.8 million and $2.2 million for the years ended May 31, 2019, 2018 and 2017, respectively. The income tax benefit for 2019, 2018 and 2017 are negated by the full valuation allowance recorded against the deferred tax assets.

Employee Stock Purchase Plan

The Employee Stock Purchase Plan (the “Stock Purchase Plan”) provides a means by which employees (the “participants”) are given an opportunity to purchase the Company's common stock through payroll deductions. A total of 3,500,000 shares of common stock have been reserved for issuance under the Stock Purchase Plan. Shares are offered through two purchase periods, each with duration of approximately 6 months, commencing on the first business day of the first and third fiscal quarters. An employee is eligible to participate in an offering period if, on the first day of an offering period, he or she has been employed in a full-time capacity for at least six months, with a customary working schedule of 20 or more hours per week and more than five months in a calendar year. Employees who own stock possessing 5% or more of the total combined voting power or value of all classes of stock are not eligible to participate in the Stock Purchase Plan. The purchase price of the shares of common stock acquired on each purchase date will be the lower of (i) 85% of the fair market value of a share of common stock on the first day of the offering period or (ii) 85% of the fair market value of a share of common stock on the last day of the purchase period, subject to adjustments made by the Board of Directors. The Stock Purchase Plan is intended to qualify as an “employee stock purchase plan” within the meaning of Section 423 of the Internal Revenue Code. During the years ended May 31, 2017 and 2019, an additional 500,000 and 1,000,000 shares of the Company's common stock, respectively, were reserved for issuance under the Stock Purchase Plan.

The Company uses the Black-Scholes option-pricing model to calculate the purchase date fair value of the shares issued under the Stock Purchase Plan and recognize expense related to shares purchased ratably over the offering period. During the years ended May 31, 2019, 2018 and 2017, 72,863, 89,943 and 129,185 shares, respectively, were issued at an average price of $16.08, $14.03 and $11.00, respectively, under the Stock Purchase Plan. As of May 31, 2019, 2.2 million shares remained available for future purchases under the Stock Purchase Plan.

16. EARNINGS PER SHARE

Basic earnings per share are based on the weighted average number of common shares outstanding. In addition, diluted earnings per share include the dilutive effect of potential common stock consisting of stock options, restricted stock units and performance stock units, provided that the inclusion of such securities is not anti-dilutive. In periods with a net loss, stock options and restricted stock units are not included in the computation of basic loss per share as the impact would be anti-dilutive.

The following table reconciles basic to diluted weighted average shares outstanding for the years ended May 31, 2019, 2018 and 2017:

	Year ended May 31,		
	2019	2018	2017
Basic	37,484,573	37,074,797	36,616,859
Effect of dilutive securities	—	—	—
Diluted	37,484,573	37,074,797	36,616,859
Securities excluded as their inclusion would be anti-dilutive	2,200,318	1,077,256	1,058,790

17. COMMITMENTS AND CONTINGENCIES

Leases

The Company is committed under non-cancelable operating leases for facilities and equipment. During fiscal years 2019, 2018 and 2017, aggregate rental costs under all operating leases were approximately $2.5 million, $2.8 million and $2.5 million, respectively. Future annual payments under non-cancelable operating leases in the aggregate at May 31, 2019, are summarized as follows (in thousands):

(in thousands)		
2020	$	2,920
2021		2,338
2022		2,133
2023		2,131
2024 and thereafter		3,227
	$	12,749

Included in the future annual payments above is a lease for the Company's corporate facility that was signed in fiscal year 2019 and will become effective in the first half of fiscal year 2020.

Other Commitments and Contingencies

The following table summarizes the Company's other future commitments and contingencies as of May 31, 2019:

(in thousands)	Total	2020	2021	2022	2023	2024 and thereafter
Purchase obligations (1)	$ 407	$ 407	$ —	$ —	$ —	$ —
Royalties	55,300	3,800	3,800	3,800	3,800	40,100
	$ 55,707	$ 4,207	$ 3,800	$ 3,800	$ 3,800	$ 40,100

(1) The non-cancelable inventory purchase obligations are not reflected on our consolidated balance sheets under accounting principles generally accepted in the United States of America.

Legal Proceedings

The Company is involved in various legal proceedings, including commercial, intellectual property, product liability, and regulatory matters of a nature considered normal for its business. The Company accrues for amounts related to these matters if it is probable that a liability has been incurred, and an amount can be reasonably estimated. The Company discloses such matters when there is at least a reasonable possibility that a material loss may have been incurred. However, the Company cannot predict the outcome of any litigation or the potential for future litigation.

C.R. Bard, Inc. v. AngioDynamics, Inc.

On January 11, 2012, C.R. Bard, Inc. ("Bard") filed a suit in the United States District Court of Utah claiming certain of our implantable port products infringe on three U.S. patents held by Bard (the "Utah Action"). Bard's Complaint sought unspecified damages and other relief. We filed petitions for reexamination in the U.S. Patent and Trademark Office ("USPTO") seeking to invalidate all three patents asserted by Bard in the litigation. Our petitions were granted and 40 of Bard's 51 patent claims were rejected and, following further proceedings, the Patent Office issued a Final Rejection of all 40 claims subject to reexamination. Thereafter, Bard filed appeals to the USPTO Board of Appeals and Interferences for all three reexaminations. The Patent Office issued decisions in all three appeals. In one (issued on March 11, 2016 for U.S. Patent No. 7,785,302), the rejections of six of the ten claims under reexamination were affirmed, but were reversed on four of the ten claims. In the second (issued on March 24, 2016 for U.S. Patent No. 7,959,615), the rejections of eight of the ten claims under reexamination were affirmed but the rejections of the other two of the ten claims were reversed. In the third (issued on March 29 for U.S. Patent No. 7,947,022) the rejections of all twenty claims under reexamination were affirmed. Thereafter, Bard filed Requests for Rehearing in all three reexamination appeals and the Company filed Requests for Rehearing in two of the reexamination appeals (the ‘302 and ‘615 patent reexaminations). The PTO denied all three Rehearing Requests - - on February 1, 2017 for the ‘302 reexam; on February 17, 2017 for the ‘022 reexam; and on February 21, 2017 for the ‘615 reexam, but modified its characterization of one prior art reference for the ‘302 and ‘022 decisions. Bard filed a Notice of Appeal to the Federal Circuit Court of Appeals in all three reexams and the Company filed Cross-Appeals for the ‘302 and the ‘615 reexams. The parties have completed the process of filing the various appellate briefs. Medcomp also filed an Amicus Brief in support of the Company on November 22, 2017. An oral hearing was held on September 5, 2018 and the court rendered its decision on September 28, 2018, affirming that claims 1-5 and 10 of the ‘615 patent were invalid but that claims 6-7 of the 615 patent and claims 1-4 of the 302 patent were valid over the asserted prior art references. The Federal Circuit also reversed the PTAB’s claim construction ruling and remanded for consideration of obviousness for the remaining claims under the new claim construction ruling and for further findings with respect to whether one of the asserted references qualified as a printed publication. On January 28, 2019, on remand, the USPTO reversed the rejections of the ‘302 claims 1-10, ‘022 claims 1-20 and ‘615 claims 6-9. The USPTO has since issued Inter Partes Reexamination Certificates for the ‘302 Patent (confirming validity of claims 1-10) on June 10, 2019, and for the ‘022 patent (confirming validity of claims 1-20) on July 2, 2019. A Certificate has not yet been issued for ‘615. Meanwhile, the Utah action remains stayed; and, on July 12, 2017, Bard assigned the asserted patents to Bard Peripheral Vascular, Inc. (“BPV”) which was added as Co-Appellant before the Federal Circuit and as a co-Plaintiff in the Utah action. The Company believes these claims are without merit and intends to defend them vigorously. The Company has not recorded an expense related to the outcome of this litigation because it is not yet possible to determine if a potential loss is probable nor reasonably estimable.

On March 10, 2015, C.R. Bard, Inc. ("Bard") and Bard Peripheral Vascular, Inc. (“BPV”) filed suit in the United States District Court for the District of Delaware (the “Delaware Action") claiming certain of the Company's implantable port products infringe on three other U.S. patents held by Bard, which are different from those asserted in the Utah action. Bard's complaint seeks unspecified damages and other relief. On June 1, 2015, the Company filed two motions in response to Bard’s Complaint - one sought transfer to the District of Utah where the Utah Action is currently pending, and the other sought dismissal of the entire complaint on grounds that none of the claims in the asserted patents is directed to patent eligible subject matter under Section 101 of the Patent Statute and in light of recent authority from the U. S. Supreme Court. On January 12, 2016, the Court issued a decision denying both motions. A Markman hearing was held on March 10, 2017 and the Court issued its Claim Construction Order on May 19, 2017. On May 19, 2017, Bard served its Final Infringement Contentions and on June 2, 2017, the Company served its Final Invalidity Contentions. On October 20, 2017, the scheduling order for the case was amended to, among other things, set a trial date commencing July 23, 2018. The parties completed Expert Discovery in January 2018 and completed briefing on their respective case dispositive motions on April 27, 2018. On June 26, 2018, the Court denied all case dispositive motions, ruling that issues of material fact remained in dispute. On July 9, 2018, the Court continued the trial until March 2019. On January 9, 2019 the court held a further claim construction hearing to resolve two outstanding claim construction issues prior to trial. A Report and Recommendation was issued on February 11, 2019 and entered by the Court on February 28, 2019. Jury selection was held on Friday March 1, 2019 and trial began on March 4, 2019. On day four of the jury trial, at the close of C.R. Bard’s case (Plaintiff), Judge Bataillon granted judgment as a matter of law (JMOL) under rule 50(a) in favor of AngioDynamics, dismissing Bard’s suit. On April 5, 2019, Bard filed a precautionary Notice of Appeal to the Federal Circuit. On April 26, 2019, the District Court issued a Memorandum and Order confirming the grant of judgment in the Company’s favor of patent ineligibility, non-infringement, patent invalidity and no willful infringement. Meanwhile, on May 10, 2019, the Company filed a Motion for Attorney fees and non-taxable expenses under 35 USC Sec. 285. On May 21, 2019, the Court issued a Memorandum and Order which, inter alia, stayed proceedings on the Company’s fee Motion and the Company’s equitable claims pending appeal; and entered Final Judgment on May 21, 2019 as well. Bard filed a second Notice of Appeal on May 23, 2019. Both appeals have since been consolidated and Bard’s opening brief is currently due on July 29, 2019. We maintain our belief that Bard’s claims are without merit. The Company has not recorded an expense related to the outcome of this litigation because it is not yet possible to determine if a potential loss is probable nor reasonably estimable.

AngioDynamics, Inc. v. C.R. Bard, Inc.

On May 30, 2017, the Company commenced an action in the United States District Court for the Northern District of New York entitled AngioDynamics, Inc. v. C.R. Bard, Inc. and Bard Access Systems, Inc. (“Bard”). In this action, the Company alleges that Bard has illegally tied the sales of its tip location systems to the sales of its PICCs. The Company alleges that this practice violates the federal antitrust laws and has had, and continues to have, an anti-competitive effect in the market for PICCs. The Company seeks both monetary damages and injunctive relief. Bard moved to dismiss on September 8, 2017. On August 6, 2018 the court denied Bard’s motion in its entirety. The parties are currently engaged in discovery, which is set to close in January 2020.

Merz North America Settlement

On May 16, 2019, Merz North America, Inc. (“Merz”) commenced an action in the United States District Court for the Southern District of New York entitled Merz North America, Inc. v. AngioDynamics, Inc. In this action, Merz alleged breach of contract against AngioDynamics based on a March 1, 2016 Distribution Agreement. On June 28, 2019, AngioDynamics reached a settlement with Merz in which AngioDynamics agreed to make a lump-sum payment to Merz in return for dismissal of the case with prejudice. Merz filed a stipulation of dismissal with the Court on July 23, 2019.

18. SEGMENTS AND GEOGRAPHIC INFORMATION

Segment information

The Company considers its business to be a single segment entity related to the development, manufacture and sale on a global basis of medical devices for vascular access, surgery, peripheral vascular disease and oncology. The Company's chief operating decision maker (CEO) evaluates the various global product portfolios on a net sales basis. Executives reporting in to the CEO include those responsible for operations and supply chain management, research and development, sales, franchise marketing and certain corporate functions. The CEO evaluates profitability, investment and cash flow metrics on a consolidated worldwide basis due to shared infrastructure and resources.

Total sales by product category are summarized below (in thousands):

	Year ended May 31,		
(in thousands)	2019	2018	2017
Net sales by Product Category			
Vascular Interventions & Therapies	$ 119,901	$ 119,704	$ 128,747
Vascular Access	94,730	92,760	96,481
Oncology/Surgery	56,003	49,191	44,560
Total	$ 270,634	$ 261,655	$ 269,788

Geographic information

Total sales for geographic areas are summarized below (in thousands):

	Year ended May 31,		
(in thousands)	2019	2018	2017
Net sales by Geography			
United States	$ 216,957	$ 213,727	$ 223,816
International	53,677	47,928	45,972
Total	$ 270,634	$ 261,655	$ 269,788

For fiscal years 2019, 2018 and 2017, international sales as a percentage of total net sales were 20%, 18% and 17%, respectively. Sales to any one country outside the U.S., as determined by shipment destination, did not comprise a material portion of net sales in any of the last three fiscal years. In addition, no one customer represents more than 10% of consolidated net sales. 99% of long-lived assets are located within the United States.

19. ACQUISITION, RESTRUCTURING AND OTHER ITEMS, NET

For the years ended May 31, 2019, 2018 and 2017 acquisition, restructuring and other items, net consisted of:

	Year ended May 31,		
(in thousands)	2019	2018	2017
Legal (1)	$ 7,802	$ 8,407	$ 19,480
Mergers and acquisitions (2)	4,030	1,660	—
Intangible and other asset impairment	1,704	—	5,604
Restructuring	289	4,674	1,348
Other	1,302	691	1,078
Total	$ 15,127	$ 15,432	$ 27,510

(1) Legal expenses related to litigation that is outside the normal course of business.
(2) Mergers and acquisitions expenses related to investment banking, legal and due diligence.

Included in the $7.8 million in legal for fiscal year 2019 is a $3.4 million settlement received for the Biolitec litigation. The settlement received offsets legal expenses paid related to the settlement proceedings. In addition, the $2.5 million accrual for the settlement of the Merz contract termination is included in legal expenses above. Of the $19.5 million in legal for fiscal year 2017, $12.5 million relates to a reserve for DOJ litigation settlement which was paid in July 2018. The remaining legal expenses relate to litigation that is outside of the normal course of business.

Restructuring

The Company evaluates its performance and looks for opportunities to improve the overall operations of the Company on an ongoing basis. As a result of this evaluation, certain restructuring initiatives are taken to enhance the Company’s overall operations.

Operational Consolidation

On February 1, 2017, the Company announced to employees an operational consolidation plan (the “plan”) to consolidate manufacturing facilities in Manchester, GA and Denmead, UK into the Glens Falls and Queensbury, NY facilities. This plan will streamline and optimize the manufacturing functions into one centralized location increasing the utilization of the Glens Falls and Queensbury facilities, optimizing inventory and reducing cost of goods sold through savings in overhead expenses and direct labor. The restructuring activities associated with the plan were completed in the fourth quarter of fiscal year 2018 with immaterial validation and regulatory costs incurred in fiscal year 2019.

The Company recorded restructuring charges related to the plan during the year ended May 31, 2019, 2018 and 2017 of $0.3 million, $4.7 million and $1.3 million, respectively. Total restructuring charges recorded as part of the plan were $6.3 million. Termination benefits were only earned if an employee stays until their termination date; therefore, the expenses related to termination benefits were recorded ratably over the service period.

The following table presents a rollforward of the restructuring reserve for the years ended May 31, 2019, 2018 and 2017:

(in thousands)	Termination Benefits	Plant Consolidation	Regulatory Filings	Contract Cancellation Costs	Other Costs	Total
Balance at May 31, 2016	$ —	$ —	$ —	$ —	$ —	$ —
Charges	851	494	—	—	3	1,348
Non-cash adjustments	—	(108)	—	—	—	(108)
Cash payments	—	(275)	—	—	(3)	(278)
Balance at May 31, 2017	$ 851	$ 111	$ —	$ —	$ —	$ 962
Charges	1,440	2,892	68	200	74	4,674
Non-cash adjustments	—	(276)	—	—	—	(276)
Cash payments	(1,453)	(2,706)	(56)	—	(74)	(4,289)
Balance at May 31, 2018	$ 838	$ 21	$ 12	$ 200	$ —	$ 1,071
Charges	—	244	44	—	—	288
Non-cash adjustments	—	—	—	(9)	—	(9)
Cash payments	(838)	(265)	(44)	(191)	—	(1,338)
Balance at May 31, 2019	$ —	$ —	$ 12	$ —	$ —	$ 12

The Company's remaining restructuring liability is comprised of regulatory expenses which are expected to be paid in the next twelve months and are included in accounts payable on the consolidated balance sheet.

20. ACCUMULATED OTHER COMPREHESIVE INCOME (LOSS)

Changes in each component of accumulated other comprehensive income (loss), net of tax, are as follows for fiscal years 2019 and 2018:

(in thousands)	Foreign currency translation gain (loss)	Unrealized gain (loss) on marketable securities	Total
Balance at May 31, 2017	$ (1,305)	$ (19)	$ (1,324)
Other comprehensive income before reclassifications, net of tax	270	102	372
Amounts reclassified from accumulated other comprehensive income	—	—	—
Net other comprehensive income	$ 270	$ 102	$ 372
Balance at May 31, 2018	$ (1,035)	$ 83	$ (952)
Other comprehensive income (loss) before reclassifications, net of tax	(317)	33	(284)
Amounts reclassified from accumulated other comprehensive income	—	(116)	(116)
Net other comprehensive loss	$ (317)	$ (83)	$ (400)
Balance at May 31, 2019	$ (1,352)	$ —	$ (1,352)

21. QUARTERLY INFORMATION (unaudited)

Quarterly results of operations during the fiscal years ended May 31, 2019 and 2018 are as follows:

	2019			
(in thousands, except per share data)	First quarter	Second quarter	Third quarter	Fourth quarter
Net sales	$ 63,943	$ 69,985	$ 65,524	$ 71,182
Gross profit	35,953	40,552	38,163	41,332
Net income (loss) from continuing operations	(5,704)	(3,587)	(4,609)	2,753
Net income from discontinued operations	5,235	5,727	5,405	56,120
Net income (loss) (1)	$ (469)	$ 2,140	$ 796	$ 58,873
Loss per share from continuing operations				
Basic	$ (0.15)	$ (0.10)	$ (0.12)	$ 0.07
Diluted	$ (0.15)	$ (0.10)	$ (0.12)	$ 0.07
Earnings per share from discontinued operations				
Basic	$ 0.14	$ 0.15	$ 0.14	$ 1.49
Diluted	$ 0.14	$ 0.15	$ 0.14	$ 1.47
Earnings per share net income				
Basic	$ (0.01)	$ 0.06	$ 0.02	$ 1.57
Diluted	$ (0.01)	$ 0.06	$ 0.02	$ 1.54

	2018			
(in thousands, except per share data)	First quarter	Second quarter	Third quarter	Fourth quarter
Net sales	$ 64,909	$ 66,617	$ 63,936	$ 66,193
Gross profit	33,042	34,699	37,496	38,619
Net income (loss) from continuing operations	(5,008)	(4,413)	9,903	(6,709)
Net income from discontinued operations	4,973	4,662	4,116	8,811
Net income (loss) (2)	$ (35)	$ 249	$ 14,019	$ 2,102
Loss per share from continuing operations				
Basic	$ (0.14)	$ (0.12)	$ 0.27	$ (0.18)
Diluted	$ (0.14)	$ (0.12)	$ 0.26	$ (0.18)
Earnings per share from discontinued operations				
Basic	$ 0.13	$ 0.13	$ 0.11	$ 0.24
Diluted	$ 0.13	$ 0.13	$ 0.11	$ 0.24
Earnings per share net income				
Basic	$ 0.00	$ 0.01	$ 0.38	$ 0.06
Diluted	$ 0.00	$ 0.01	$ 0.37	$ 0.06

(1) Net income in the fourth quarter of fiscal year 2019 was driven by the gain on the sale of the Fluid Management business.
(2) Included within net income during the third quarter of fiscal year 2018 is a $9.3 million discrete tax benefit as a result of the Tax Reform Act and the revaluation of the Company's deferred tax assets, liabilities and valuation allowance to reflect the lower U.S. federal statutory rate (Note 11).

The data in the schedules above has been intentionally rounded to the nearest thousand and therefore the quarterly amounts may not sum to the full year amounts.

On May 31, 2019, the Company completed the sale of the Fluid Management business and all of the assets used primarily in connection with the Fluid Management business (Note 3). The Company has adjusted the consolidated financial statements to reflect the Fluid Management business as a discontinued operation for the current year and all prior periods presented. The quarterly information for fiscal year 2019 and prior years reflect the Fluid Management business as a discontinued operation.

22. SUBSEQUENT EVENTS

On June 3, 2019 and in connection with the completion of the Fluid Management divestiture, the Company repaid all amounts outstanding under its existing Credit Agreement and entered into a new Credit Agreement with the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, and Bank of America, N.A. and KeyBank National Association, as co-syndication agents.

The new Credit Agreement provides for a $125.0 million secured revolving credit facility, which includes an uncommitted expansion feature that allows the Company to increase the total revolving commitments and/or add new tranches of term loans in an aggregate amount not to exceed $75.0 million. The proceeds may be used to refinance certain existing indebtedness of the Company and its subsidiaries, to finance the working capital needs, and for general corporate purposes (including permitted acquisitions), of the Company and its subsidiaries. The new facility has a five year maturity. Interest on the facility will be based, at the Company's option, on a base rate of LIBOR plus an applicable margin tied to the Company's total leverage ratio and having ranges between 0.25% and 0.75% for base rate loans and between 1.25% and 1.75% for LIBOR loans. After default, the interest rate may be increased by 2.0%. The facility will also carry a commitment fee of 0.20% to 0.25% per annum on the unused portion.

The new Credit Agreement includes customary representations, warranties and covenants, and acceleration, indemnity and events of default provisions, including, among other things, two financial covenants. One financial covenant requires the Company to maintain, as of the end of each of its fiscal quarters commencing with the fiscal quarter ended May 31, 2019, a fixed charge coverage ratio of not less than 1.25 to 1.00. The other financial covenant requires the Company to maintain, as of the end of each of its fiscal quarters commencing with the fiscal quarter ended May 31, 2019, a total leverage ratio of not greater than 3.00 to 1.00 (which, during certain periods following material acquisitions, shall be increased to 3.50 to 1.00).

AngioDynamics, Inc. and Subsidiaries

SCHEDULE II -VALUATION AND QUALIFYING ACCOUNTS

(in thousands)

Column A	Column B	Column C	Column D	Column E
Description	Balance at Beginning of Year	Additions - Charged to costs and expenses	Deductions	Balance at End of Period
Year Ended May 31, 2017				
Allowance for deferred tax asset	$ 42,209	$ 6,139	$ —	$ 48,348
Allowance for sales returns and doubtful accounts	$ 4,372	$ (291)	$ (1,136)	$ 2,945
Year Ended May 31, 2018				
Allowance for deferred tax asset	$ 48,348	$ —	$ (21,741)	$ 26,607
Allowance for sales returns and doubtful accounts	$ 2,945	$ 608	$ (1,087)	$ 2,466
Year Ended May 31, 2019				
Allowance for deferred tax asset	$ 26,607	$ —	$ (14,919)	$ 11,688
Allowance for sales returns and doubtful accounts	$ 2,466	$ 393	$ (953)	$ 1,906

EXHIBITS

Exhibit Number	Description of Exhibits	Incorporated by Reference		
		Form	Exhibit	Filing Date
2.2	Stock Purchase Agreement, dated as of October 8, 2012, by and among AngioDynamics, Inc., Vortex Medical, Inc. (“Vortex”), the stockholders of Vortex set forth on the signature pages thereto, the option holders of Vortex set forth on the signature pages thereto and CHTP Management Services, Inc., as sellers’ representative.	8-K	2.1	October 12, 2012
2.3	Asset Purchase Agreement dated as of April 17, 2019 by and between AngioDynamics, Inc. and Medline Industries Inc.	8-K	2.1	April 18, 2019
3.1.1	Amended and Restated Certificate of Incorporation.	10-Q	3.1	October 7, 2005
3.1.2	Certificate of Amendment to the Amended and Restated Certificate of Incorporation of AngioDynamics, Inc.	10-K	3.1.2	August 10, 2015
3.2	Second Amended and Restated By-Laws, effective October 16, 2015.	8-K	10.1	October 21, 2015
10.1	Credit Agreement, dated as of November 7, 2016, by and among AngioDynamics, Inc., the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A. and Keybank National Association as co-syndication agents, and JPMorgan Chase Bank, N.A., Merrill Lynch, Pierce, Fenner & Smith Incorporated and Keybank National Association as joint bookrunners and joint lead arrangers.	8-K	10.1	November 10, 2016
10.1.1	Amendment One to the Credit Agreement dated May 24, 2018.	10-K	10.1.1	July 23, 2018
10.1.2	Credit Agreement, dated as of June 3, 2019, by and among AngioDynamics, Inc., the lenders party thereto, JPMorgan Chase Bank, N.A., as administrative agent, Bank of America, N.A. and Keybank National Association as co-syndication agents.	8-K	10.1	June 6, 2019
10.1.3	AngioDynamics, Inc. 2004 Stock and Incentive Award Plan (as amended).	DEF 14A		August 30, 2018
10.1.5	AngioDynamics 2016 Total Shareholder Return Performance Unit Agreement Program.	10-Q	10.1	October 5, 2016
10.1.6	AngioDynamics 2017 Total Shareholder Return Performance Unit Agreement Program.	10-Q	10.1	September 29, 2017
10.1.7	AngioDynamics 2018 Total Shareholder Return Performance Unit Agreement Program.	10-K	10.1.7	July 23, 2018
10.2	AngioDynamics, Inc. Employee Stock Purchase Plan (as amended).	DEF 14A		August 30, 2018
10.3	Form of Non-Statutory Stock Option Agreement pursuant to the AngioDynamics, Inc. Stock and Incentive Award Plan.	10-Q	10.1	October 12, 2004
10.3.1	Form of Non-Statutory Stock Option Agreement pursuant to the AngioDynamics, Inc. Stock and Incentive Award Plan.	10-K	10.3.1	July 23, 2018
10.4.3	Form of 2016 Performance Share Award Agreement pursuant to the AngioDynamics, Inc. 2004 Stock and Incentive Award Plan.	10-Q	10.2	October 5, 2016
10.4.4	Form of 2017 Performance Share Award Agreement pursuant to the AngioDynamics, Inc. 2004 Stock and Incentive Award Plan.	10-Q	10.2	September 29, 2017
10.4.5	Form of 2018 Performance Share Award Agreement pursuant to the AngioDynamics, Inc. 2004 Stock and Incentive Award Plan.	10-K	10.4.5	July 23, 2018
10.5	Form of Restricted Stock Award Agreement pursuant to the AngioDynamics, Inc. 2004 Stock and Incentive Award Plan.	8-K	10.3	May 12, 2005
10.6	Rita Medical Systems, Inc. 1994 Incentive Stock Plan.	S-1	10.2	May 3, 2000

Exhibit Number	Description of Exhibits	Incorporated by Reference Form	Exhibit	Filing Date
10.7	Horizon Medical Products, Inc. 1998 Stock Incentive Plan.	S-1	10.11	February 13, 1998
10.8	Rita Medical Systems, Inc. 2000 Stock Plan.	S-1/A	10.3	June 14, 2000
10.9	Rita Medical Systems, Inc. 2000 Directors' Stock Plan, as amended on June 8, 2005.	S-8	99.2	July 8, 2005
10.10	Rita Medical Systems, Inc. 2005 Stock and Incentive Plan.	S-8	99.1	July 8, 2005
10.11	Form of Indemnification Agreement of AngioDynamics, Inc.	8-K	10.1	May 12, 2006
10.11.1	Employment Agreement, dated April 1, 2016, between AngioDynamics, Inc. and James C. Clemmer.	8-K	10.1	April 6, 2016
10.11.2	Employment letter, dated August 18, 2016, between AngioDynamics, Inc. and Michael C. Greiner.	8-K	10.1	July 25, 2016
10.12	Change in Control Agreement, dated April 1, 2016, between AngioDynamics, Inc. and James C. Clemmer.	8-K	10.2	April 6, 2016
10.12.1	Form of Severance Agreement of AngioDynamics, Inc.	8-K	10.1	October 31, 2007
10.13	Form of Change in Control Agreement.	10-K/A	10.13	January 12, 2015
10.13.1	Change in Control Agreement, dated August 18, 2016, between AngioDynamics, Inc. and Michael C. Greiner.	10-Q	10.3	October 5, 2016
10.14	Performance Share Award Agreement, with a grant date of April 4, 2016, between AngioDynamics, Inc. and James C. Clemmer.	8-K	10.3	April 6, 2016
10.15	AngioDynamics, Inc. Total Shareholder Return Performance Share Award Program - Performance Period Ending July 2019.	8-K	10.4	April 6, 2016
10.16	Stock Option Award Agreement, with a grant date of April 4, 2016, between AngioDynamics, Inc. and James C. Clemmer.	8-K	10.5	April 6, 2016
10.17	Restricted Stock Unit Award Agreement, with a grant date of April 4, 2016, between AngioDynamics, Inc. and James C. Clemmer.	8-K	10.6	April 6, 2016
10.18	Separation Agreement and General Release, dated April 22, 2016, between AngioDynamics, Inc. and Joseph M. DeVivo.	8-K	10.1	April 27, 2016
14	Code of Ethics.	8-K	14	May 21, 2006
21	Subsidiaries			
23	Consent of Deloitte & Touche LLP, an independent registered public accounting firm.			
31.1	Certification by the Chief Executive Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			
31.2	Certification by the Chief Financial Officer Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.			
32.1	Certification by the Chief Executive Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			
32.2	Certification by the Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			
101.INS	XBRL Instance Document			
101.SCH	XBRL Schema Document			
101.CAL	XBRL Calculation Linkbase Documents			
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document			
101.LAB	XBRL Labels Linkbase Documents			
101.PRE	XBRL Presentation Linkbase Documents			

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.

		ANGIODYNAMICS, INC.	
Date:	July 25, 2019	By:	/S/ HOWARD W. DONNELLY **Howard W. Donnelly,** **Chairman of the Board, Director**

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.

Date:	July 25, 2019	/S/ HOWARD W. DONNELLY **Howard W. Donnelly,** **Chairman of the Board, Director**
Date:	July 25, 2019	/S/ JAMES C. CLEMMER **James C. Clemmer,** **President, Chief Executive Officer** **(Principal Executive Officer)**
Date:	July 25, 2019	/S/ MICHAEL C. GREINER **Michael C. Greiner** **Executive Vice President, Chief Financial Officer, (Principal Financial and Accounting Officer)**
Date:	July 25, 2019	/S/ WESLEY E. JOHNSON, JR. **Wesley E. Johnson, Jr.,** **Director**
Date:	July 25, 2019	/S/ JEFFREY G. GOLD **Jeffrey G. Gold,** **Director**
Date:	July 25, 2019	/S/ DENNIS S. METENY **Dennis S. Meteny,** **Director**
Date:	July 25, 2019	/S/ KEVIN J. GOULD **Kevin J. Gould,** **Director**
Date:	July 25, 2019	/S/ JAN S. REED **Jan S. Reed,** **Director**
Date:	July 25, 2019	/S/ EILEEN O. AUEN **Eileen O. Auen,** **Director**
Date:	July 25, 2019	**Karen A. Licitra,** **Director**

Exhibit 21

Subsidiaries of AngioDynamics, Inc.

Subsidiary	State of Incorporation or Organization
Vortex Medical	Delaware
NM Holding Company, Inc.	Delaware
Navilyst Medical Holdings, Inc.	Delaware
Navilyst Medical, Inc.	Delaware
AngioDynamics UK Limited	United Kingdom
AngioDynamics Netherlands B. V.	Netherlands
RITA Medical Systems, LLC	Delaware
AngioDynamics France, SARL	France
AngioDynamics Canada Inc.	British Columbia
AngioDynamics Medical Brasil Participacoes Ltda.	Sao Paulo
RadiaDyne LLC	Texas

Exhibit 23

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-120057, 333-138456, 333-140627, 333-161355, 333-162844, 333-170619, 333-190640, 333-203441 and 333-229814 on Form S-8 and No. 333-190642 on Form S-3 of our reports dated July 25, 2019 relating to the financial statements and financial statement schedule of AngioDynamics, Inc., and the effectiveness of AngioDynamics Inc.'s internal control over financial reporting, appearing in this Annual Report on Form 10-K of AngioDynamics, Inc. for the year ended May 31, 2019.

/s/ Deloitte & Touche LLP

Boston, Massachusetts
July 25, 2019

Exhibit 31.1

CERTIFICATION

I, James C. Clemmer, certify that:

1. I have reviewed this annual report on Form 10-K of AngioDynamics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 25, 2019

/ S / JAMES C. CLEMMER

James C. Clemmer, President,
Chief Executive Officer

Exhibit 31.2

CERTIFICATION

I, Michael C. Greiner, certify that:

1. I have reviewed this annual report on Form 10-K of AngioDynamics, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

(a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

(b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

(c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

(d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

(a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

(b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: July 25, 2019

/ S / MICHAEL C. GREINER

Michael C. Greiner, Executive Vice President,
Chief Financial Officer

Exhibit 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO TITLE 18,
UNITED STATES CODE, SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, James C. Clemmer, President, Chief Executive Officer and Director of ANGIODYNAMICS, Inc. (the "Company"), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that, to the best of my knowledge:

1. the annual report on Form 10-K of the Company for the fiscal year ended May 31, 2019 (the "Report") fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: July 25, 2019

/s/ James C. Clemmer

James C. Clemmer, President,
Chief Executive Officer

Exhibit 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO TITLE 18,
UNITED STATES CODE, SECTION 1350, AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael C. Greiner, Chief Financial Officer of ANGIODYNAMICS, Inc. (the “Company”), certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that, to the best of my knowledge:

1. the annual report on Form 10-K of the Company for the fiscal year ended May 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and

2. the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: July 25, 2019

/s/ Michael C. Greiner

Michael C. Greiner, Executive Vice President,
Chief Financial Officer