

NATUS MEDICAL INC
Form 10-K
March 01, 2019
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UNITED
STATES
SECURITIES
AND
EXCHANGE
COMMISSION
Washington,
D.C. 20549

FORM 10-K

Annual report pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended
December 31, 2018

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:
000-33001

NATUS MEDICAL INCORPORATED
(Exact name of Registrant as specified in its charter)
Delaware 77-0154833
(State or other jurisdiction of (I.R.S. Employer
incorporation or organization) Identification Number)
6701 Koll Center Parkway, Suite 120, Pleasanton, CA 94566
(Address of principal executive offices) (Zip Code)
(925) 223-6700

(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common Stock, \$0.001 par value per share	The NASDAQ Stock Market LLC (Nasdaq Global Select Market)

Securities Registered Pursuant to Section 12(g) of the Act: None

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

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

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

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

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Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) 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 the Form 10-K or any amendment to this Form 10-K. Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer," "accelerated filer," and "smaller reporting company" in Rule 12b-2 of the Exchange Act:

Large accelerated filer Accelerated filer

Non-accelerated filer Smaller reporting company

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

As of June 30, 2018, the last business day of Registrant's most recently completed second fiscal quarter, there were 33,590,337 shares of Registrant's common stock outstanding, and the aggregate market value of such shares held by non-affiliates of Registrant (based upon the closing sale price of such shares on the Nasdaq Global Select Market on June 29, 2018) was \$1,158,866,627. Shares of Registrant's common stock held by each executive officer and director and by each entity that owns 5% or more of Registrant's outstanding common stock have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

On February 20, 2019, the registrant had 33,777,388 shares of its common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Certain portions of the Registrant's Definitive Proxy Statement for the 2019 Annual Meeting of Stockholders or an amendment to this Annual Report on Form 10-K, to be filed with the Securities and Exchange Commission, are incorporated by reference into Part III of this Annual Report on Form 10-K.

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PART I

ITEM 1. Business

This Annual Report on Form 10-K (this “Annual Report”) contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 about Natus Medical Incorporated (“Natus,” “we,” “us,” or “the Company”). These statements include, among other things, statements concerning our expectations, beliefs, plans, intentions, future operations, financial condition and prospects, and business strategies. The words “may,” “will,” “continue,” “estimate,” “project,” “intend,” “believe,” “expect,” “anticipate,” and similar expressions generally identify forward-looking statements. Forward-looking statements in this Item 1 include, but are not limited to, statements regarding the effectiveness and advantages of our products, factors relating to demand for and economic advantages of our products, our plan to develop and acquire additional technologies, products or businesses, our marketing, technology enhancement, and product development strategies, our ability to complete all of our backlog orders, and the anticipated timing and effect of the implementation of our new organizational structure.

Forward-looking statements are not guarantees of future performance and are subject to substantial risks and uncertainties that could cause our actual results to differ materially from those that we predicted in the forward-looking statements. Investors should carefully review the information contained under the caption “Risk Factors” contained in Item 1A for a description of risks and uncertainties that could cause actual results to differ from those that we predicted. All forward-looking statements are based on information available to us on the date hereof, and we assume no obligation to update forward-looking statements, except as required by Federal Securities laws.

“Natus” and other trademarks of ours appearing in this report are our property.

Overview

Natus is a leading provider of neurology, newborn care, and hearing and balance assessment healthcare products and services used for the screening, diagnosis, detection, treatment, monitoring and tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction and neurosurgical treatments, epilepsy, sleep disorders, neuromuscular diseases and balance and mobility disorders.

On January 15, 2019, Natus announced the implementation of a new organizational structure designed to improve operational performance and make it a stronger, more profitable company.

Natus intends to consolidate its three business units, Neuro, Newborn Care and Otometrics into “One Natus.” This initiative is designed to create a single, unified company with globally led operational teams in Sales & Marketing, Manufacturing, R&D, Quality, and General and Administrative functions. The new structure is expected to provide for increased transparency, efficiency and cross-functional collaboration across common technologies, processes and customer channels.

Natus expects to transition to the new structure with further implementation stages continuing throughout 2019. The description of Natus’ strategic business units that is contained in this Annual Report describes such strategic business units as they existed during the fiscal year ended December 31, 2018.

Product Families

We are organized into three strategic business units, each with multiple product families:

Neuro—Includes products and services that provide diagnostic, therapeutic and surgical solutions in neurodiagnostics, neurocritical care and neurosurgery. Neuro’s comprehensive neurodiagnostic solutions include electroencephalography (“EEG”) and long term monitoring (“LTM”), Intensive Care Unit (“ICU”) monitoring, electromyography (“EMG”), sleep analysis or polysomnography (“PSG”), and intra-operative monitoring (“IOM”). These solutions enhance the diagnosis of neurological conditions such as epilepsy, sleep disorders and neuromuscular diseases.

Our neurocritical care solutions include management of traumatic brain injury by continuous monitoring of intracranial pressure (“ICP”) and cerebrospinal fluid (“CSF”) drainage. Our neurosurgical solutions provide options that promote dural healing in the cranium as well as treatment solutions for procedures involving hydrocephalus. We acquired our neurocritical care and neurosurgical product lines from Integra LifeSciences in October 2017 (“Integra Asset Acquisition”).

Newborn Care—Includes products and services for newborn care including hearing screening, brain injury, ROP vision screening, thermoregulation, jaundice management, and various disposable newborn care supplies, as well as products for diagnostic hearing assessment for children through adult populations, and products to diagnose and assist in treating balance and mobility disorders.

Otometrics—Includes products for hearing and diagnostics and hearing aid fitting, including computer-based audiological, otoneurologic and vestibular instrumentation and sound rooms for hearing and balance care professionals. Otometrics has a complete product and brand portfolio known for its sophisticated design technology in the hearing and balance assessment markets. We acquired the Otometrics business in January 2017.

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Neuro

Our Neuro business unit represents a comprehensive line of neurodiagnostic, neurocritical care, and neurosurgical products that are used by healthcare practitioners in the diagnosis and monitoring of neurological disorders of the central and peripheral nervous system. The environments in which these products are used include outpatient private practice facilities and inpatient hospital environments, including diagnostic procedures and monitoring of patients during admissions, surgery, while under sedation, in post-operative care, and in intensive care units. Our Neuro products and services include:

Neurodiagnostic

Electroencephalography—Equipment, supplies and services used to monitor and visually display the electrical activity generated by the brain and other key physiological signals for both diagnosis and monitoring of neurological disorders in the hospital, research laboratory, clinician office and patient’s home.

Electromyography—Equipment and supplies used to measure electrical activity in nerves, muscles, and critical pathways includes EMG, nerve conduction and evoked potential functionality.

Polysomnography—Equipment and supplies used to measure a variety of respiratory and physiologic functions to assist in the diagnosis and monitoring of sleep disorders, such as insomnia and obstructive sleep apnea, a condition that causes a person to stop breathing intermittently during sleep.

Intraoperative monitoring—Equipment and supplies used to monitor the functional integrity of certain neural structures (i.e. nerves, spinal cord and parts of the brain) during surgery. The goal of IOM is to provide real time guidance to the surgeon and anesthesiologist which will reduce the risk to the patient during surgery.

Neurocritical Care

Intracranial pressure monitoring—Equipment and catheters used to monitor pressure in the cranium/brain and catheters to drain cerebrospinal fluid from the brain to aid in hydrocephalus and traumatic brain injury cases.

Neurosurgery

Shunts and Dural grafts—Shunts are used to manage the drainage of cerebrospinal fluid from the brain to maintain appropriate levels of CSF when treating hydrocephalus. Dural grafts are used in procedures to repair or substitute a patient's dura mater in the brain.

Diagnostic EEG and Long-term Monitoring

We design, manufacture, and market a full line of instruments and supplies used to help diagnose the presence of seizure disorders and epilepsy, look for causes of confusion, evaluate head injuries, tumors, infections, degenerative diseases, and metabolic disturbances that affect the brain, and assist in surgical planning. This type of testing is also done to diagnose brain death in comatose patients. These systems and instruments work by detecting, amplifying, and recording the brain’s electrical impulses, as well as other physiological signals needed to support clinical findings.

Routine clinical EEG recording is done by placing electrodes on a patient’s scalp over various areas of the brain to record and detect patterns of activity and specific types of electrical events. EEG technologists perform the tests, and neurologists, neurophysiologists and epileptologists review and interpret the results.

Routine outpatient clinical EEG testing is performed in hospital neurology laboratories, private physician offices, and in ambulatory settings such as the patient’s home, providing physicians with a clinical assessment of a patient’s condition. Long-term inpatient monitoring of EEG and behavior (LTM) is used to determine complex treatment plans, and for patients with seizures that do not respond to conventional therapeutic approaches, surgical solutions may be appropriate. Patients suffering from severe head trauma and other acute conditions that may affect the brain are monitored in ICUs. In addition, research facilities use EEG equipment to conduct research on humans and laboratory animals.

Global Neuro-Diagnostic Services (“GND”), which we acquired in early 2015, has historically provided in-home ambulatory EEG monitoring. In January 2019, as part of the implementation of our new “One Natus” organizational structure and our enhanced focus on our more profitable medical device businesses, we announced our plans to wind down GND operations during the first quarter of 2019.

Diagnostic Electroencephalograph Monitoring Product Lines

Our EEG diagnostic monitoring product lines for neurology consist of signal amplifiers, workstations to capture and store synchronized video and EEG data, and proprietary software. These products are typically used in concert, as part

of an EEG “system” by the neurology/neurophysiology department of a hospital or clinic to assist in the diagnosis and monitoring of neurological conditions.

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NeuroWorks; NicoletOne. Our EEG Systems include a broad range of products, from software licenses and ambulatory monitoring systems to advanced laboratory systems with multiple capabilities for EEG, ICU monitoring, long-term monitoring of up to 256 channels, and physician review stations with quantitative EEG analysis capabilities.

Stellate/Gotman Spike and Seizure; GridView; NicoletOne Trends. Our proprietary spike and seizure detection algorithm detects, summarizes, and reports EEG events that save health-care professionals time by increasing the speed and accuracy of interpretation. GridView is a tool that allows the clinician to correlate EEG patterns with electrode contacts on a 3D view of the patient brain using magnetic resonance (“MR”) or computed tomography (“CT”) images, thus enabling the visualization and annotation of the brain surface and internal structures involved in the diagnosis of epilepsy. NicoletOne Trends provides a comprehensive set of EEG analysis algorithms that are used to generate compressed trends of large amounts of data to assist in the clinical evaluation and data review process.

Proprietary Signal Amplifiers. Our proprietary signal amplifiers function as the interface between the patient and the computer. The headbox connects electrodes attached to the patient’s head to our EEG monitoring systems. Our proprietary amplifier products are sold for a wide variety of applications under the following brand names: Xltek, Trex, EEG32U, EMU40EX, Brain Monitor, Quantum, Nicolet v32 and v44 models.

Nicolet Cortical Stimulator. This product is our proprietary device that provides cortical stimulation to the brain during functional brain mapping either before or during surgery to help the surgeon protect the eloquent parts of the brain. The device can be used as a standalone unit or with the fully integrated NicoletOne software that supports control of the device from the software, automated mapping and comprehensive report generation.

Supplies. We also manufacture and market a full line of proprietary EEG electrodes and other supplies used in the electroencephalography field.

Electrodiagnostic Monitoring

Our electrodiagnostic systems include EMG, nerve conduction (“NCS”), and often evoked potential (“EP”) functionality. EMG and NCS involve the measurement of electrical activity of muscles and nerves both at rest and during contraction. Measuring the electrical activity in muscles and nerves can help diagnose diseases of the peripheral, central nervous system or musculature system. An electromyogram is done to determine if there is any disease present that effects muscle tissue, nerves, or the junctions between nerve and muscle (neuromuscular junctions). An electromyogram can also be used to diagnose the cause of weakness, paralysis, and muscle twitching, and is also used as a primary diagnosis for carpal tunnel syndrome, which is the most frequently encountered peripheral compressive neuropathy. EMG is also used for clinical applications of botox to relieve muscle spasm and pain. We market both the clinical system and the needles used for these procedures.

In addition to EMG and NCS functionality, many of our Electrodiagnostic systems also include EP. Evoked potentials are elicited in response to a stimulus. These evoked potentials can come from the sensory pathways (such as hearing and visual) or from the motor pathways. An examination tests the integrity of these pathways including the associated area of the brain. Sophisticated amplifiers are required to recognize and average evoked potential EMG and NCS signals.

Electrodiagnostic Product Lines

Dantec Keypoint. The Dantec Keypoint G-4 and Focus EMG and EP family of products features amplifiers, stimulators, and strong signal quality. The Keypoint is used for advanced neurodiagnostic applications such as single fiber EMG, visual and auditory evoked potentials, and in routine nerve conduction studies. The Keypoint system is also available in a portable laptop configuration.

Dantec Clavis. The Dantec Clavis device is a hand-held EMG and current stimulation device that provides muscle and nerve localization information to assist with medication and botox injections. In conjunction with the Bo-ject hypodermic needle and electrodes, physicians can better localize the site of the injection.

Nicolet EDX family. A hardware platform of amplifiers, base control units, stimulators and hand-held probes that are sold with Nicolet brand proprietary software. These mid to high end systems have full functionality, strong signal quality, and flexibility. They include EMG, NCS, EP’s, IOM and advanced data analysis features.

Nicolet VikingQuest. An EMG system for the mid-range market. The device runs on our proprietary software.

Natus Neurology UltraPro. This is a low to mid-level product that offers high quality data collection using the Dantec Keypoint amplifiers and the proprietary Natus EMG software.

Supplies. We also manufacture and market a full line of proprietary EMG needles and other supplies used in the electrodiagnostic field.

Diagnostic Polysomnography Monitoring

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PSG, which involves the analysis of respiratory patterns, brain electrical activity and other physiological data, has proven critical for the diagnosis and treatment of sleep-related diseases such as apnea, insomnia, and narcolepsy. A full polysomnographic sleep study entails a whole-night recording of brain electrical activity, muscle movement, airflow, respiratory effort, oxygen levels, electrical activity of the heart, and other parameters. In some studies patients are fitted with treatment devices using Positive Airway Pressure technology (“PAP”) during the sleep study and the proper settings for the treatment devices are determined. In many cases, the sleep study is performed in the patient’s home.

Diagnostic PSG Monitoring Product Lines

We market dedicated diagnostic PSG monitoring products that can be used individually or as part of a networked system for overnight sleep studies to assist in the diagnosis of sleep disorders. Additionally we offer products that are specifically designed to be used in the patient’s home. Some of our EEG systems described above can also be configured to perform diagnostic PSG monitoring. These products include software licenses, ambulatory monitoring systems, and laboratory systems that combine multiple capabilities, including EEG monitoring, physician review stations, and quantitative PSG analysis capabilities.

Embla REMlogic, Sandman; and Xltek SleepWorks. Our diagnostic PSG systems capture and store all data digitally. The systems enable users to specify rules and personal preferences to be used during analysis, summarizing the results graphically and incorporating them in detailed reports.

Proprietary Amplifiers. Our data acquisition systems incorporate recent developments in superior amplifiers for sleep analysis and are sold under brand names such as Embla and MPR, Xltek Trex and SleepWorks, NDx and SDx. Our amplifiers are used in both hospitals and stand-alone clinics. In addition to exceptional signal quality, headboxes include various tools such as built-in oximeters and controls to allow the user to start and stop a study or perform electrode impedance testing either at the patient’s bedside or from the monitoring room.

Practice Management Software. Our Embla Enterprise Practice Management Software provides a solution for institutions as well as private labs and physicians for patient scheduling, inventory control, staff scheduling, data management, business reports and billing interfaces. Enterprise may be used in conjunction with many Natus PSG products.

PMSD. PastuerMatic Sterile Dryers are used in hospital and clinic sleep laboratories to provide non-chemical sterilization of products used in sleep therapy. An environmentally friendly approach to disinfection, the PMSD products offer cost effective sterilization for sleep labs of all sizes.

Supplies. We also market a broad line of supplies, disposable products and accessories for the PSG laboratory including the XactTrace respiratory monitoring belts.

Intraoperative Monitoring

Intraoperative monitoring (“IOM”) is the use of electrophysiological methods such as EEG, EMG, and evoked potentials to monitor the functional integrity of certain neural structures (i.e. nerves, spinal cord and parts of the brain) during surgery. The purpose of IOM is to reduce the risk to the patient’s nervous system, and/or to provide functional guidance to the surgeon and anesthesiologist during surgery.

Diagnostic IOM Product Lines

Xltek Protektor. The Protektor system is an IOM system that provides medical professionals with all information necessary to make immediate and critical surgical decisions. The system combines flexibility with multi-modality allowing full coverage of IOM techniques. The Protektor comes in 16 or 32 channel options.

Nicolet EDX. These combo systems are used in IOM applications where a smaller number of channels is sufficient. This approach is primarily followed in international markets that utilize the integrated system approach that allows for the use of the system in EMG clinical applications as well as in IOM applications.

Neurocritical Care Products

Intracranial pressure and temperature provide insight into the health of the brain, especially in patients experiencing a traumatic brain injury, other traumatic, ischemic or hemorrhagic incidents, or a major neurosurgical procedure. A small hole is drilled into the brain to allow insertion of a catheter that contains a pressure/temperature or pressure transducer that allows continuous monitoring of brain temperature and/or pressure.

Camino ICP Monitor. The Camino ICP Monitor is a compact, portable device that provides tools for continuously determining and monitoring intracranial pressure and intracranial temperature. It has a touch screen interface, physiological alarms, and can output data to either a patient bedside monitor or to remote media types via a USB drive. These systems are used in the intensive care unit (ICU) environment.

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Camino Catheters. Camino catheters use either fiber optic or strain gauge technology to measure either pressure and temperature or just pressure. Camino catheters measure their respective values at the tip of the catheter which eliminates the need for a fluid-filled system that uses an external transducer to measure pressure. The Camino Flex Ventricular Intracranial Pressure Monitoring Kit has a catheter that allows both the measurement of ICP and CSF drainage.

Neurosurgical Products

During brain surgery, the dura of the brain may need to be repaired or replaced. A dural graft is used to serve as a dural substitute for the surgical repair of dural defects. Moreover, brain surgery is performed to place shunts in the brain to help drain excess CSF either externally or into the body for reabsorption to help treat hydrocephalus.

DURAFORM. DURAFORM Dural Graft Implant is an absorbable collagen matrix to provide a soft, conforming, and easy to use dural substitute. This product is used in the operating room to provide repair of the dura mater and promote dural healing.

Shunts. Shunts are used in the operating room to provide solutions for hydrocephalus.

Newborn Care

Our newborn care business unit represents a line of products and services that are used by healthcare practitioners in the diagnosis and treatment of common medical ailments in newborn care, as well as other products used in newborn through adult populations, including hearing diagnostics and balance & mobility systems. Our products are organized in nine modalities and include:

Newborn Hearing Screening—Products used to screen hearing in newborns.

Diagnostic Hearing Assessment—Products used to screen for or diagnose hearing loss, or to identify abnormalities affecting the peripheral and central auditory nervous systems in patients of all ages.

Balance and Mobility—Systems to diagnose and assist in treating balance disorders in an evidence-based, multidisciplinary approach.

Thermoregulation—Products used to control the newborn environment including incubators and warmers.

Jaundice Management—Products used to treat jaundice, the single largest cause for hospital readmission of newborns in the U.S.

Newborn Brain Injury—Products used to diagnose the severity of brain injury, monitor the effectiveness of drug therapies, detect seizure activity and monitor general neurological status.

Eye Imaging—Systems and products used in the advanced science and practice of neonatal and pediatric retinal imaging.

Essentials—Products used in the everyday operation of neonatal intensive care unit (“NICU”) and well-baby nursery department within the hospital environment.

NICVIEW—Live streaming video for families with babies in the NICU that enables family members and approved friends to see the new baby, 24/7, from anywhere in the world - from any device, within a secured environment.

Newborn Hearing Screening

Hearing impairment is the most common treatable chronic disorder in newborns, affecting as many as five babies out of every 1,000 newborns. It is estimated that 20,000 hearing-impaired babies are born in the United States (“U.S.”) every year, and as many as 60,000 more in the rest of the developed world. Until the introduction of universal newborn hearing screening programs, screening was generally performed only on those newborns that had identifiable risk factors for hearing impairment. However, screening only those newborns with risk factors for hearing impairment overlooks approximately half of newborns with some level of hearing impairment.

Early identification of hearing impairment and early intervention has been shown to improve language development significantly. Undetected hearing impairment often results in the failure to learn, process spoken language, and speak.

Newborn Hearing Screening Techniques

The two traditional technologies used to screen newborns and infants for hearing impairment are auditory brainstem response and otoacoustic emissions.

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Auditory brainstem response (“ABR”). ABR technology is the most accurate and comprehensive method for screening and diagnosing hearing impairment. ABR technology is based on detecting the brain’s electric impulses resulting from a specific auditory stimulus.

Otoacoustic emission (“OAE”). OAEs are sounds created by the active biomechanical processes within the sensory cells of the cochlea. They occur both spontaneously and in response to acoustic stimuli. OAE screening uses a probe placed in the ear canal to deliver auditory stimuli and to measure the response of the sensory cells with a sensitive microphone.

Newborn Hearing Screening Product Lines

Our newborn hearing screening product lines consist of the ALGO, ABAer, AuDX, and Echo-Screen newborn hearing screeners. These hearing screening products utilize proprietary signal detection technologies to provide accurate and non-invasive hearing screening for newborns and are designed to detect hearing loss at 30 or 35 dB nHL or higher.

Each of these devices is designed to generate a PASS or REFER result.

ALGO 5 and 3i Newborn Hearing Screeners. These AABR devices deliver thousands of soft audible clicks to the newborn’s ears through sound cables and disposable earphones connected to the instrument. Each click elicits an identifiable brain wave, which is detected by disposable electrodes placed on the head of the child and analyzed by the screening device. These devices use our proprietary AABR signal detection algorithm.

ABAer Newborn Hearing Screener. The ABAer, which is a PC-based newborn hearing screening device, offers a combination of AABR, OAE, and diagnostic ABR technologies in one system.

Echo-Screen. Our hand-held Echo-Screen products provide a choice or combination of proprietary ABR and OAE technologies that can also be used for children through adults. The Echo-Screen III device is a compact, multi-modality handheld hearing screener that is tightly integrated with audible Lite Hearing Screening Data Management.

Hearing Screening Supply Products

For infection control, accuracy, and ease of use, the supply products used with our newborn hearing screening devices are designed as single-use, disposable products. Each screening supply product is designed for a specific hearing screening technology.

ABR Screening Supply Kits. Each ABR screen is carried out with single-use earphones and electrodes, which are alcohol and latex-free. The adhesives used in these supply products are specially formulated for use on the sensitive skin of newborns. To meet the needs of our customers we offer a variety of packaging options. Echo-Screen and ABAer offer the choice of either an earphone or use of ear tips for perform ABR screening.

OAE Supply Products. Each OAE screen is carried out with single-use ear tips that are supplied in a variety of sizes and packaging options.

Peloton Screening Services

Peloton Screening Services is a nationwide service offering that provides hearing screening services to hospital-based customers. The core platform of the program meets the objectives of today’s healthcare environment by aligning with family centered care principals and Joint Committee on Infant Hearing (JCIH) recommendations. Peloton compliments our newborn hearing screening product lines and provides all aspects of a comprehensive service program: equipment, supplies, professional oversight by nurses or audiologists, screening personnel, case management, quality review & oversight, and state data management reporting.

Thermoregulation

Incubators offer a controlled, consistent microenvironment for thermoregulation and humidification within a closed system to maintain skin integrity and body temperature.

Thermoregulation products

Incubators. Our NatalCare incubators, including those used for transporting infants, provide high thermal performance with a double wall design, easy to use control panels and features such as improved weighing functionality with automatic centering and an electronic tilting mechanism. The easy-to-clean, smooth design, and choice of options make these customizable incubators appropriate for different use environments.

Jaundice Management

The American Academy of Pediatrics estimates that each year 60% of the approximately four million newborns in the U.S. become jaundiced. According to the Journal of the American Medical Association, neonatal jaundice is the single largest cause for hospital readmission of newborns in the U.S., and accounts for 50% of readmissions. Because of the serious consequences of hyperbilirubinemia, the American Academy of Pediatrics recommends that all newborns be closely monitored for jaundice and that phototherapy is the standard of care for the treatment of hyperbilirubinemia. The guidelines further recommend that all nurseries

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have the necessary equipment to provide intensive phototherapy, and specifically recommend the use of the “blue” light as incorporated into our neoBLUE products.

Jaundice Management Products

neoBLUE Product Family. This product line consists of our neoBLUE, neoBLUE Mini, neoBLUE Cozy, neoBLUE Compact and neoBLUE blanket devices, which utilize light emitting diodes (“LEDs”) to generate a high-intensity, narrow spectrum of blue light that is clinically proven to be most effective in the treatment of newborn jaundice. Our neoBLUE phototherapy devices emit significantly less ultraviolet light and heat than conventional phototherapy devices, reducing the risk of skin damage and dehydration for infants undergoing treatment. Because of the high intensity of these lights, the treatment time associated with phototherapy is reduced.

- Medix MediLED Product Family. A full-size, free-standing LED phototherapy system and a MediLED mini light to be used on top of an incubator or attached to the Medix radiant warmer. The MediLED incorporates an array of blue and white LEDs, while the mini system utilizes blue “super LEDs” that provide high intensity phototherapy.

Newborn Brain Injury

For many years, newborn infants admitted to the NICU of a hospital have been routinely monitored for heart activity, temperature, respiration, oxygen saturation, and blood pressure. Recently it has also been considered important to monitor brain activity. A cerebral function monitor, utilizing amplitude-integrated EEGs (“aEEGs”), is a device for monitoring background neurological activity. Our simplified aEEG devices introduced over ten years ago, allow neonatologists and nurses to set-up and interpret basic neurological traces without neurology oversight.

Newborn Brain Injury Products

Our newborn brain injury products record and display parameters that the neonatologist uses to assess and monitor neurological status in the newborn. These devices continuously monitor and record brain activity, aiding in the detection and treatment of HIE and seizures. The devices also monitor the effects of drugs and other therapies on brain activity and improve the accuracy of newborn neurological assessments. They are used with electrodes attached to the head of the newborn to acquire an EEG signal that is then filtered, compressed, and displayed graphically on the device or as a hardcopy printout. The monitors have touch screens for easy navigation and onscreen keyboards for data entry at the bedside.

Olympic Brainz Monitor. The Olympic Brainz Monitor is our latest generation Cerebral Function Monitor. The device can be used in single-channel, two-channel or three-channel modes to continuously monitor and record brain activity.

Eye Imaging

Our RetCam devices incorporate a camera combined with proprietary imaging software that are used to diagnose and monitor a range of ophthalmic maladies in premature infants. RetCam specializes in NICU ophthalmic imaging used in the detection of retinopathy of prematurity (ROP) and Retinoblastoma (RB) in newborns. ROP and RB are diseases of the retina that must be detected very early after birth and treated immediately, so the RetCam diagnostic camera is a fundamental tool in preventing vision loss and total blindness in infants.

Eye Imaging Products

RetCam images enable physicians to assist in the evaluation of pediatric ocular disease which have preserved the vision in thousands of infants. Each of the RetCam systems deliver objective and interpretable detail, allow image comparison over time, enable remote consultations, and provide reliable and defensible medico-legal documentation.

• RetCam 3. Full-featured imaging system with a range of interchangeable lenses, Fluorescein Angiography module option.

RetCam Shuttle. Laptop-based system with a smaller cart and dual wheel casters for improved transportability.

RetCam Portable. Laptop-based version in a case for maximum portability.

Essentials

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The Newborn Care Essentials products include such items as: Biliband® eye protectors, GumDrop® pacifiers, MiniMuffs® noise attenuators, NeatNick® heel lancets, Olympic® Circumstraint, Olympic® Papoose Boards, Olympic® Smart Scales, OraSwab, Save the Gonads® x-ray protection devices and SugarPlum® glucose lancets.

NICVIEW

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The video streaming solution NICVIEW offers parents and families secured access to a live video stream of their baby. For hospitals, the system offers a step into family centered care.

Balance and Mobility

We have historically offered a number of balance and mobility products under our Neurocom brand, including our EquiTest, Balance Master, VSR, and VSR Sport, and inVision product lines. In January 2019, as part of the implementation of our new “One Natus” organizational structure and our enhanced focus on our more profitable medical device businesses, we announced that we would immediately discontinue sales of new products under our Neurocom brand. We will continue to support Neurocom customers with technical support and service and we believe we will continue as a leader in the balance diagnostic market with our Otometrics' branded balance products.

Otometrics

Otometrics provides hearing diagnostic, hearing aid fitting and balance instrumentation and software solutions to hearing and balance care professionals worldwide. For more than 50 years, Otometrics has been helping hearing and balance care professionals succeed in improving the quality of life for their clients and patients by delivering expert knowledge, reliable solutions and services and trusted partnerships.

Otometrics develops, manufactures and markets computer-based audiological, otoneurologic and vestibular instrumentation in more than 80 countries. The Otometrics solutions portfolio covers key application areas within hearing assessment, hearing screening, hearing instrument fitting and balance assessment. Many of the Otometrics hearing and balance care solutions have set precedent within the hearing care industry and are used by thousands of clinicians around the world.

As an independent provider of hearing care diagnostic solutions, Otometrics works closely with leading hearing aid manufacturers to develop new solutions within hearing assessment and hearing aid fitting.

Hearing Assessment

From otoacoustic emissions (OAE) and immittance screening to advanced audiological testing and 3D digital ear scanning, Otometrics offers a wide range of flexible devices and PC-based solutions that are designed to screen, test and assess patients of all ages. Otometrics hearing assessment solutions offer functionality to support basic audiometric testing to advanced tinnitus and pediatric hearing assessment. Hearing care solutions by Otometrics help streamline the hearing screening and assessment process making it easier and convenient for the professional and the patient. Otometrics also manufactures and markets a broad line of supplies and disposable products and accessories for hearing assessment.

Hearing Instrument Fitting and Verification

Otometrics' fitting solutions help professionals manage the entire hearing aid fitting process - from fitting and verifying the hearing aid to patient counseling and follow up. Used by thousands of hearing aid dispensers, audiologists and clinicians around the world, Otometrics fitting solutions support otoscopy, audiometry, hearing aid testing and programming, fitting and verification with wireless design and binaural fitting capability. Otometrics fitting solutions are PC-based, Noah-compatible and supported by integrated audiometric software that helps to streamline the fitting process for greater efficiency and patient satisfaction. Otometrics also manufactures and markets a broad line of supplies and disposable products and accessories for hearing instrument fitting and verification.

3D Digital Ear Scanning

Otometrics hearing assessment solutions include the breakthrough 3D digital ear scanning solutions Otoscan® that gives hearing care professionals innovative ways to attract and convert more clients while delivering customized hearing care in an efficient way. Otoscan® enables hearing care professionals to make digital impressions for custom in-the-ear pieces such as earmolds and hearing aids. The scanner solution applies breakthrough technology to

transform images of the ear into 3D digital files that are uploaded to the cloud service, Otocloud™, for immediate use in production of custom products, delivering significant efficiency and quality gains in the production of hearing aids. Otocloud™ is a web-based portal supported by a dedicated Microsoft Azure server domain.

Audiometric Sound Rooms

Otometrics manufactures and markets a wide range of sound room solutions specifically designed for audiometric testing. Otometrics Genie sound rooms are built to deliver a quality audiometry testing environment while providing efficiency for staff and comfort for patients. Certified staff help in the planning, choice and installation of each sound room so it becomes an integrated part of the clinic, equipment and workflow. Otometrics Genie sound rooms deliver unique features such as the

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Cam-Lock assembly system, high performance/low profile floor, window in the door, and excellent attenuation and acoustic capabilities to ensure acoustic performance, efficient workflow and maximum testing comfort.

Balance Assessment

Professionals who evaluate patients with balance disorders use Otometrics' vestibular diagnostic and ENG/VNG (electronystagmography/videonystamography) systems and services. These solutions are used by audiologists, otolaryngologists, otologists and neurologists for identifying auditory and vestibular abnormalities. Otometrics balance care solutions are compact and include the world's first portable, gold standard video head impulse test (“vHIT”) and offer modular functionality to support vHIT, video frenzel, positional, oculomotor and SHIMP (suppression head impulse) testing. Otometrics also manufacturers and markets a broad line of supplies, disposable face cushions, and accessories for balance assessment.

Segment and Geographic Information

We operate in one reportable segment, which we have presented as the aggregation of our neuro, newborn care, and otometrics product families. Within this reportable segment we are organized on the basis of the healthcare products and services we provide which are used for the screening, detection, treatment, monitoring and tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction, epilepsy, and sleep disorders.

Our end-user customer base includes hospitals, clinics, laboratories, physicians, nurses, audiologists, and governmental agencies. Most of our international sales are to distributors, who in turn resell our products to end users or sub-distributors.

Information regarding our sales and long-lived assets in the U.S. and in countries outside the U.S. is contained in Note 19—Segment, Customer and Geographic Information of our Consolidated Financial Statements included in this report and is incorporated in this section by this reference.

Revenue by Product Family and Product Category

For the years ended December 31, 2018, 2017 and 2016, revenue from our product families as a percent of total revenue was approximately as follows:

	Year Ended December 31,					
	2018	2017	2016			
Neuro	53 %	48 %	62 %			
Newborn Care	23 %	29 %	38 %			
Otometrics	24 %	23 %	— %			
Total	100 %	100 %	100 %			

We also look at revenue as either being generated from sales of Devices and Systems, which are generally non-recurring, or related Supplies and Services, which are generally recurring. The products that are attributable to these categories are described above. Revenue from Devices and Systems, Supplies and Services as a percent of total revenue for the years ending December 31, 2018, 2017 and 2016 is as follows:

	Year Ended December 31,					
	2018	2017	2016			
Devices and Systems	72 %	71 %	63 %			
Supplies	22 %	22 %	28 %			
Services	6 %	7 %	9 %			
Total	100 %	100 %	100 %			

In 2018, 2017 and 2016, no single end-user customer comprised more than 10% of our revenue.

Backlog

In general, the company does not manufacture its products against a backlog of orders and does not consider backlog to be a significant indicator of the level of future sales activity. Production and inventory levels are based on the level of incoming orders as well as projections of future demand. Therefore, the company believes that backlog information is not meaningful to understanding its overall business and should not be considered a reliable indicator of the company's ability to achieve any particular level of revenue or financial performance.

Marketing and Sales

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Marketing

Our marketing strategy differentiates our products by their level of quality, performance, and customer benefit. We educate customers worldwide about our products through trade conferences and direct presentations to healthcare professionals.

Domestic Direct and Distributor Sales

We sell our products in North America primarily through a direct sales organization. We believe this direct sales organization allows us to maintain a higher level of customer service and satisfaction than would otherwise be possible by other distribution methods. We also sell certain products under private label and distribution arrangements.

For the years ended December 31, 2018, 2017 and 2016, domestic revenue as a percent of total revenue was approximately as follows:

	Year Ended December 31,		
	2018	2017	2016
Domestic revenue	56.7 %	54.1 %	65.6 %

International Direct and Distributor Sales

We sell some of our products outside the U.S. through direct sales channels in Australia, Canada, China, Denmark, France, Germany, Italy, the Netherlands, New Zealand, Nordics (Finland, Sweden, Norway) Spain, United Kingdom and parts of Latin America; we sell other products in those regions and into more than 100 other countries through a distributor sales channel.

For the years ended December 31, 2018, 2017 and 2016, international revenue as a percent of total revenue was approximately as follows:

	Year Ended December 31,		
	2018	2017	2016
International revenue	43.3 %	45.9 %	34.4 %

We sell products to our distributors under substantially the same terms as sales through our direct sales channels. Terms of sales to international distributors are generally “ex works,” where title and risk of loss are assumed by the distributor at the shipping point. Distributors are generally given exclusive rights in their territories to purchase products from Natus and to resell to end users or sub-distributors. Our distributors typically perform marketing, sales, and technical support functions in their respective markets. Each distributor may sell Natus products to their customer directly, via other distributors or resellers, or both. We actively train our distributors in product marketing, selling, and technical service techniques.

Seasonality in Revenue

We experience seasonality in our revenue. Demand for our products is historically higher in the second half of the year compared to the first. Our seasonality results from the purchasing habits of our hospital-based customers, whose purchases are often governed by calendar year budgets.

Group Purchasing Organizations

More than 90% of the hospitals in the U.S. are members of group purchasing organizations (“GPO”s), which negotiate volume purchase agreements for member hospitals, group practices, and other clinics.

For the years ended December 31, 2018, 2017 and 2016, revenue from direct purchases by GPO members as a percent of total revenue was approximately as follows:

	Year Ended December 31,		
	2018	2017	2016
Direct purchases by GPO members	13.3 %	14.5 %	12.3 %

Third-Party Reimbursement

In the U.S., healthcare providers generally rely on third-party payors, including private health insurance plans, federal Medicare, state Medicaid, and managed care organizations, to reimburse all or part of the cost of the procedures they perform. Third-party payors can affect the pricing or the relative attractiveness of our products by regulating the maximum amount of reimbursement these payors provide for services utilizing our products. In addition, our Peloton hearing screening service is dependent on third-party payors to reimburse us for services provided.

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Customer Service and Support

We generally provide a one-year warranty on our medical device and system products. We also sell extended service agreements on our medical device and system products. Service, repair, and calibration services for our domestic customers are provided by Company-owned service centers and our field service specialists. Service for international customers is provided by a combination of Company-owned facilities and vendors on a contract basis.

Manufacturing

Other companies manufacture a significant portion of the components used in our products; however, we perform final assembly, testing, and packaging of many of the devices ourselves to control quality and manufacturing efficiency. We also use contract vendors to manufacture some of our disposable supply and medical device products. We perform regular quality assessments of these vendors, which include on-site quality audits.

We purchase materials and components from qualified suppliers that are subject to our quality specifications and inspections. We conduct quality audits of our key suppliers, several of which are experienced in the supply of components to manufacturers of finished medical devices, or supplies for use with medical devices. Most of our purchased components are available from more than one supplier.

Our manufacturing, service, and repair facilities are subject to periodic inspection by local and foreign regulatory authorities. Our quality assurance system is subject to regulation by the U.S. Food and Drug Administration (“FDA”) and other government agencies. We are required to conduct our product design, testing, manufacturing, and control activities in conformance with the FDA’s quality system regulations and to maintain our documentation of these activities in a prescribed manner. In addition, our production facilities have received International Organization for Standardization (“ISO”) 13485 certification. ISO 13485 certification standards for quality operations have been developed to ensure that medical device companies meet the standards of quality on a worldwide basis. We have also received the EC Certificate pursuant to the European Union Medical Device Directive 93/42/EEC, which allows us to place a CE mark on our products.

Research and Development

We are committed to introducing new products and supporting current product offerings in our markets through a combination of internal as well as external efforts that are consistent with our corporate strategy.

Internal product development capabilities. We believe that product development capabilities are essential to provide our customers with new product offerings. We plan to leverage our core technologies by introducing product line extensions as well as new product offerings.

Partnerships that complement our expertise. We continue to seek strategic partners in order to develop products that may not otherwise be available to us. By taking advantage of our core competencies, we believe that we can bring products to market in an efficient manner and leverage our distribution channels.

New opportunities through technology acquisition. We continue to evaluate new, emerging, and complementary technologies in order to identify new product opportunities. With our knowledge of our current markets we believe that we can effectively develop technologies into successful new products.

Our research and development expenses were \$61.7 million or 11.6% of total revenue in 2018, \$51.8 million or 10.3% of total revenue in 2017, and \$33.4 million or 8.8% of total revenue in 2016.

Proprietary Rights

We protect our intellectual property through a combination of patent, copyright, trade secret, and trademark laws. We attempt to protect our intellectual property rights by filing patent applications for new features and products we develop. We enter into confidentiality or license agreements with our employees, consultants, and corporate partners, and seek to control access to our intellectual property, distribution channels, documentation, and other proprietary information. However, we believe that these measures afford only limited protection.

The intellectual rights to some of the original patents for technology incorporated into our products are now in the public domain. However, we do not consider these patents, or any currently viable patent or related group of patents, to be of such importance that their expiration or termination would materially affect our business.

We capitalize the cost of purchased technology and intellectual property, as well as certain costs incurred in obtaining patent rights, and amortize these costs over the estimated economic lives of the related assets.

We have several registered trademarks and service marks. Our marks are pending or registered trademarks in the United States and several foreign countries. We intend to file for additional trademarks to strengthen our trademark rights, but we cannot be certain that our trademark applications will result in registration or that our trademarks will be enforceable.

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Competition

We sell our products in competitive and rapidly evolving markets. We face competition from other companies in all of our product lines. Our competitors range from small privately-held companies to multinational corporations and their product offerings vary in scope and breadth. We do not believe that any single competitor is dominant in any of our product lines.

We derive a significant portion of our revenue from the sale of disposable supplies that are used with our medical devices. In the U.S., we sell our supply products in a mature market and we expect that our products could face increasing competition, including competitors offering lower prices, which could have an adverse effect on our revenue and profit margins.

Integra LifeSciences continues to offer products and services that compete with the neurosurgery product lines we acquired in the Integra Asset Acquisition, and we expect significant competition from Integra LifeSciences as we seek to maintain and expand this business.

We believe the principal factors that will draw clinicians and other buyers to our products, include:

- Level of specificity, sensitivity, and reliability of the product;
- Time required to obtain results with the product, such as to test for or treat a clinical condition;
- Relative ease of use of the product;
- Depth and breadth of the products features;
- Quality of customer support for the product;
- Frequency of product updates;
- Extent of third-party reimbursement of the cost of the product or procedure;
- Extent to which the products conform to standard of care guidelines; and
- Price of the product.

We believe that our primary competitive strength relates to the functionality and reliability of our products. Different competitors may have competitive advantages in one or more of the categories listed above and they may be able to devote greater resources to the development, promotion, and sale of their products.

Government Regulation

FDA's Premarket Clearance and Approval Requirements

Unless an exemption applies, the medical devices we sell in the United States, must first receive one of the following types of FDA premarket review authorizations under the Food, Drug, and Cosmetics Act, as amended:

- Clearance via Section 510(k); or
- Premarket approval via Section 515 if the FDA has determined that the medical device in question poses a greater risk of injury.

The FDA's 510(k) clearance process usually takes from three to six months, but can take longer. The process of obtaining premarket approval via Section 515 is much more costly, lengthy, and uncertain. Premarket approval generally takes from one to three years, but can take longer. We cannot be sure that the FDA will ever grant either 510(k) clearance or premarket approval for any product we propose to market in the United States.

The FDA decides whether a device must undergo either the 510(k) clearance or premarket approval process based upon statutory criteria. These criteria include the level of risk that the FDA perceives to be associated with the device and a determination of whether the product is a type of device that is substantially equivalent to devices that are already legally marketed. The FDA places devices deemed to pose relatively less risk in either Class I or Class II, which requires the manufacturer to submit a premarket notification requesting 510(k) clearance, unless an exemption applies. The premarket notification under Section 510(k) must demonstrate that the proposed device is substantially equivalent in intended use and in safety and effectiveness to a previously cleared 510(k) device or a device that was in commercial distribution before May 28, 1976 for which the FDA has not yet called for the submission of premarket approval applications.

The FDA places devices deemed to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices, or devices deemed to be not substantially equivalent to a predicate device, in its Class III classification. The FDA requires these devices to undergo the premarket approval process via Section 515 in which the manufacturer

must prove the safety and effectiveness of the device. A premarket approval application must provide extensive pre-clinical and clinical trial data.

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The FDA may require results of clinical trials in support of a 510(k) submission and generally requires clinical trial results for a premarket approval application. In order to conduct a clinical trial on a significant-risk device, the FDA requires manufacturers to apply for and obtain, in advance, an investigational-device exemption. The investigational-device exemption application must be supported by appropriate data, such as animal and laboratory testing results. If the FDA and the Institutional Review Boards at the clinical trial sites approve the investigational-device exemption application for a significant-risk device, the manufacturer may begin the clinical trial. An investigational-device exemption approval provides for a specified clinical protocol, including the number of patients and study sites. If the manufacturer deems the product a non-significant risk device, the product will be eligible for more abbreviated investigational-device exemption requirements. If the Institutional Review Boards at the clinical trial sites concur with the non-significant risk determination, the manufacturer may begin the clinical trial. Most of our products have been cleared by the FDA as Class II devices.

FDA Regulation

Numerous FDA regulatory requirements apply to our products. These requirements include:

• FDA quality system regulations which require manufacturers to create, implement, and follow design, testing, control, documentation, and other quality assurance procedures;

• Medical device reporting regulations, which require that manufacturers report to the FDA certain types of adverse and other events involving their products; and

• FDA general prohibitions against promoting products for unapproved uses.

Class II and III devices may also be subject to special controls applied to them, such as performance standards, post-market surveillance, patient registries, and FDA guidelines that may not apply to Class I devices. We believe we are in compliance with applicable FDA guidelines, but we could be required to change our compliance activities or be subject to other special controls if the FDA changes existing regulations or adopts new requirements.

We are subject to inspection and market surveillance by the FDA to determine compliance with regulatory requirements. If the FDA finds that we have failed to adequately comply, the FDA can institute a wide variety of enforcement actions, including:

• Issuance of a Form 483 citation;

• Fines, injunctions, and civil penalties;

• Recall or seizure of our products;

• Issuance of public notices or warnings;

• Imposition of operating restrictions, partial suspension, or total shutdown of production;

• Refusal of our requests for 510(k) clearance or pre-market approval of new products;

• Withdrawal of 510(k) clearance or pre-market approval already granted; or

• Criminal prosecution.

The FDA also has the authority to require us to repair or replace any misbranded or adulterated medical device manufactured or distributed by us.

Other Regulations

We also must comply with numerous additional federal, state, and local laws relating to matters such as safe working conditions, manufacturing practices, environmental protection, biohazards, fire hazard control, and hazardous substance disposal. We believe we are currently in compliance with such regulations.

Countries outside of the U.S. regulate medical devices in a manner similar to that of the FDA. Our manufacturing facilities are subject to audit and have been certified to be ISO 13485:2016, Medical Device Directive 93/42/EEC, and MDSAP compliant, which allows us to sell our products in Canada, Europe, and other territories around the world. All of our manufacturing facilities are subject to inspection by our notified bodies or other competent authorities, and in some cases without advance notice. We plan to seek approval to sell our products in additional countries, while maintaining our current approvals. The time and cost of obtaining new, and maintaining existing, market authorizations from countries outside of North America, and the requirements for licensing products in these countries may differ significantly from FDA requirements.

In 2017, the European Union ("EU") adopted the EU Medical Device Regulation (Council Regulations 2017/745) which imposes stricter requirements for the marketing and sale of medical devices, including new quality system and

post-market surveillance requirements. The regulation has a three-year implementation period to May 2020 and will replace the existing directives on medical devices in the EU. After May 2020, medical devices marketed in the EU will require certification according

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to these new requirements, except that devices with valid CE certificates, issued pursuant to the Medical Device Directive before May 2020, may be placed on the market until 2024. Complying with this new regulation will require us to incur significant costs and failure to meet the requirements of the regulation could adversely impact our business in the European Union and other countries that utilize or rely on European Union requirements for medical device registrations.

Employees

On December 31, 2018, we had approximately 1,729 full time employees worldwide. In Argentina, some of our production employees are represented by labor unions and our employees in Germany have established a works council. We have not experienced any work stoppages, and we consider our relations with our employees to be good.

Executives

The following table lists our executive officers and their ages as of March 1, 2019:

Name	Age	Position(s)
Jonathan A. Kennedy	48	President and Chief Executive Officer
B. Drew Davies	53	Executive Vice President and Chief Financial Officer
D. Christopher Chung, M.D.	55	Vice President Medical Affairs, Quality & Regulatory
Austin F. Noll, III	52	Executive Vice President and Chief Commercial Officer

Jonathan A. Kennedy has served as Chief Executive Officer, and as a member of the Board of Directors since July 2018. Mr. Kennedy joined Natus as Senior Vice President and Chief Financial Officer in April 2013 and was appointed Executive Vice President and Chief Financial Officer in September 2016. In addition, he currently serves on the Board of Directors for IRadimed Corporation. Before joining Natus, Mr. Kennedy was Senior Vice President and Chief Financial Officer of Intersil Corporation, a global semiconductor manufacturer, since 2009. Prior to that, he was Intersil's Corporate Controller since 2005 and Director of Finance since 2004. Before joining Intersil, Mr. Kennedy held management roles in Finance and Information Technology with Alcon Inc. and Harris Corporation. He holds a Bachelor of Science degree in Business Administration and a Master of Science degree in Accounting from the University of Central Florida. Mr. Kennedy is also a Certified Public Accountant.

B. Drew Davies joined Natus as Executive Vice President and Chief Financial Officer in October 2018. Mr. Davies most recently served as Executive Vice President and Chief Financial Officer of Extreme Networks since June 2016. Before joining Natus, Mr. Davies served as Vice President and Corporate Controller at Marvell Semiconductor Inc. from December 2015 until May 2016. Prior to that, Mr. Davies was the Senior Vice President, Corporate Controller at Spansion, Inc. from August 2012 to December 2015. Prior to Spansion, Mr. Davies was Corporate Controller at Intersil Corporation from April 2009 to August 2012, and served as Operations Controller from March 2008 to April 2009. Mr. Davies also served as Chief Financial Officer of Nanoconduction, Inc. from March 2007 to March 2008, Director of Finance and Administration for STATSChipPac from September 1999 to March 2007, held various finance roles at Micron Custom Manufacturing Services from November 1992 to September 1999. Mr. Davies holds a Master of Business Administration degree from Santa Clara University and a Bachelor of Science, Business Accounting degree from the University of Idaho.

D. Christopher Chung, joined Natus in 2000 as the Medical Director. He has also served as Vice President of R&D and most recently since 2011 as Vice President Medical Affairs, Quality and Regulatory. From 2000 to 2007, Dr. Chung also served as a Pediatric Hospitalist at the California Pacific Medical Center in San Francisco providing patient care in the Neonatal Intensive Care Unit and Newborn Nursery. From 1997 to 2000, Dr. Chung trained as a pediatric resident at Boston Children's Hospital and Harvard Medical School. From 1986 to 1993, Dr. Chung worked as an R&D engineer Nellcor Incorporated, a medical device company that pioneered the development of pulse oximetry. Dr. Chung holds a Bachelor of Arts degree in Computer Mathematics from the University of Pennsylvania and a Doctor of Medicine degree from the Medical College of Pennsylvania-Hahnemann University School of Medicine. He is board certified in Pediatrics and is a Fellow of the American Academy of Pediatrics. Dr. Chung has also been awarded nine U.S. Patents in the medical device field.

Austin F. Noll, III joined Natus in August 2012 as the Vice President and General Manager, Neuro. Prior to joining Natus, Mr. Noll served as the President and CEO of Simpirica Spine, a California-based start-up company that developed and commercialized a novel device for spinal stabilization. Prior to joining Simpirica Spine, Mr. Noll served as the President and CEO of NeoGuide Systems, a medical robotics company acquired by Intuitive Surgical. Prior to joining NeoGuide Systems, Mr. Noll held numerous management positions at Medtronic over a 13-year period, where he served as the Vice President and General Manager of the Powered Surgical Solutions and the Neurosurgery businesses. Before Medtronic, he held sales positions at C.R. Bard and Baxter Healthcare. He received a Bachelor of Science degree in Business Administration from Miami University and a Master of Business Administration degree from the University of Michigan.

Other Information

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Natus was incorporated in California in May 1987 and reincorporated in Delaware in August 2000.

We maintain corporate offices at 6701 Koll Center Parkway Suite 120, Pleasanton, California 94566. Our telephone number is (925) 223-6700. We maintain a corporate website at www.natus.com. References to our website address do not constitute incorporation by reference of the information contained on the website, and the information contained on the website is not part of this document.

We make available, free of charge on our corporate website, copies of our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements, and all amendments to these reports, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission pursuant to Section 13(a) or 15(d) of the Securities Exchange Act. We also show detail about stock trading by corporate insiders by providing access to SEC Forms 3, 4 and 5. This information may also be obtained from the SEC's on-line database, which is located at www.sec.gov. Our common stock is traded on the Nasdaq Stock Market under the symbol "BABY".

Item 1A. Risk Factors

Our business results depend on our ability to successfully manage ongoing organizational change and business transformation and achieve cost savings and operating efficiency initiatives.

On January 15, 2019 Natus announced the implementation of a new organizational structure, "One Natus," designed to improve operational performance and make it a stronger, more profitable company. There can be no assurance that we will realize, in full or in part, the anticipated benefits of this new structure. Our financial goals assume a level of increased productivity. If we are unable to deliver these expected improvements, or continue to invest in business growth, or if the volume and nature of change require additional resources, our business operations and financial results could be materially and adversely impacted. Our ability to successfully manage and execute these initiatives and realize expected savings and benefits in the amounts and at the times anticipated is important to our business success. Any failure to do so, which could result from our inability to successfully execute organizational change and business transformation plans, changes in global or regional economic conditions, competition, changes in the industries in which we compete, unanticipated costs or charges, loss of key personnel and other factors described herein, could have a material adverse effect on our businesses, financial condition and results of operations.

Our growth in recent years has depended substantially on the completion of acquisitions and we may not be able to complete acquisitions of the same nature or relative size in the future to support a similar level of growth.

The acquisitions that we have completed have contributed to our growth in recent years. We have expended considerable effort in seeking to identify attractive acquisition candidates, and ultimately, to negotiate mutually agreeable acquisition terms. The market for attractive acquisitions is competitive and others with different strategic objectives or greater financial resources than we have may be better positioned than we are to acquire desirable targets. Further, we may not be able to negotiate acquisition terms with target companies that will allow us to achieve acceptable financial returns from the transaction.

We have initiated changes to our information systems that could disrupt our business and our financial results.

We plan to continuously improve our information systems to support the form, functionality, and scale of our business. These types of transitions frequently prove disruptive to the underlying business of an enterprise and may cause us to incur higher costs than we anticipate. Failure to manage a smooth transition to the new systems and the ongoing operations and support of the new systems could materially harm our business operations.

For example, beginning in 2012 we implemented the rollout of a world-wide, single-platform enterprise resource planning ("ERP") application including customer relationship management, product lifecycle management, demand management, consolidation and financial statement generation, and business intelligence, and in 2015 we completed the final implementation of the ERP. In 2018 we completed the implementation of the ERP application for our Otometrics and Integra acquisitions. We may fail to gain the efficiencies the implementation is designed to produce within the anticipated timeframe. We will continue to incur additional costs associated with stabilization and ongoing development of the new platform. The ongoing development and stabilization could also be disruptive to our operations, including the ability to timely ship and track product orders to customers, project inventory requirements, manage our supply chain and otherwise adequately service our customers. As we continue to integrate the Otometrics

and Integra operations, we will incur costs which could materially exceed expectations and there can be no assurance that implementation will not disrupt our operations.

If we are not able to maintain effective internal control over financial reporting in the future, the accuracy and timeliness of our financial reporting may be adversely affected.

A material weakness is defined under the standards issued by the Public Company Accounting Oversight Board as a deficiency, or combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our financial statements will not be prevented or detected and corrected on a timely basis. We

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reported a material weakness in our internal control reporting for the year ended December 31, 2017, which we remediated in 2018. Separately, during the fourth quarter of 2018, in connection with a change in control owner, management identified an existing control that was not designed at a sufficient precision to adequately review our analysis of separate reporting units, which could have resulted in a material misstatement. Although we took steps to remediate these issues in 2018 and believe that material weaknesses were remediated as of December 31, 2018, these measures may not be sufficient to avoid similar weaknesses or other deficiencies in the future. For additional information on the material weakness identified in the fourth quarter of 2018, see the “Management’s Report on Internal Control Over Financial Reporting” section of “Item 7A. Quantitative and Qualitative Disclosures About Market Risk” in this Annual Report.

The Sarbanes-Oxley Act requires, among other things, that we assess the effectiveness of our internal control over financial reporting annually and disclosure controls and procedures quarterly. In particular, we must perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on, and our independent registered public accounting firm to attest to, the effectiveness of our internal control over financial reporting, as required by Section 404 of the Sarbanes-Oxley Act. If other material weaknesses are identified in the future or we are not able to comply with the requirements of Section 404 in a timely manner, our reported financial results could be materially misstated or could be restated, we could receive an adverse opinion regarding our controls from our independent registered accounting firm and we could be subject to investigations or sanctions by regulatory authorities, which would require additional financial and management resources, and the market price of our stock could decline.

Our operating results may decline if we do not succeed in developing, acquiring, and marketing additional products or improving our existing products.

We intend to develop additional products and technologies, including enhancements of existing products, for the screening, detection, treatment, monitoring and tracking of common medical ailments. Developing new products and improving our existing products to meet the needs of current and future customers requires significant investments in research and development. If we fail to successfully sell new products, update our existing products, or timely react to changes in technology, our operating results may decline as our existing products reach the end of their commercial life cycles.

We are subject to a variety of operational risks inherent in our business which may disrupt our business and negatively impact our results of operations.

We are exposed to many types of operational risks, including business continuity, direct or indirect loss resulting from inadequate or failed internal and external processes, systems or human error, the effects of natural or man-made catastrophic events (such as natural disasters, pandemics, cyber-attacks, acts of terrorism, civil unrest and other catastrophes) or from other external events. Exposure to such events could disrupt our systems and operations significantly, which may result in financial loss and reputational damage.

Adverse economic conditions in markets in which we operate may harm our business.

Unfavorable changes in U.S. and international economic environments may adversely affect our business and financial results. During challenging economic times, and in tight credit markets, our customers may delay or reduce capital expenditures. This could result in reductions in sales of our products, longer sales cycles, difficulties in collection of accounts receivable, slower adoption of new technologies, and increased price competition, all of which could impact our results of operations and financial condition. In addition, we expect these factors will cause us to be more cautious in evaluating potential acquisition opportunities, which could hinder our ability to grow through acquisition while these conditions persist.

In 2016 voters in the United Kingdom approved "Brexit," calling for the United Kingdom to withdraw from the European Union by March 29, 2019. The effects of the Brexit vote and the perceptions as to the impact of the withdrawal of the U.K. from the European Union may adversely affect business activity and economic and market conditions in the U.K., the Eurozone, and globally, and have contributed to instability in global financial and foreign exchange markets, including volatility in the value of the pound sterling and the euro. In addition, Brexit could lead to additional political, legal and economic instability in the European Union. Natus has not identified any additional risk factors under Brexit other than those discussed herein. Additionally, we have not identified any trends or potential

changes to critical accounting estimates as a result of Brexit. We will continue to assess risk factors and accounting and reporting considerations. Any of these effects of Brexit, among others, could adversely affect our business, financial condition or future results.

Our operating results may suffer because of our exposure to foreign currency exchange rate fluctuations.

Substantially all of our sales contracts with our U.S. based customers provide for payment in U.S. dollars. With the exception of our Canadian operations, substantially all of the revenue and expenses of our foreign subsidiaries are denominated in the applicable foreign currency. Our exposure to the currency fluctuations is enhanced as a result of the Otometrics acquisition. To date we have executed only limited foreign currency contracts to hedge these currency risks. Our future revenue and expenses may be subject to volatility due to exchange rate fluctuations that could result in foreign exchange gains and

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losses associated with foreign currency transactions and the translation of assets and liabilities denominated in foreign currencies.

Substantially all our sales from our U.S. operations to our international distributors provide for payment in U.S. dollars. A strengthening of the U.S. dollar relative to other foreign currencies could increase the effective cost of our products to our international distributors as their functional currency is typically not the U.S. dollar. This could have a potential adverse effect on our ability to increase or maintain average selling prices of our products to our foreign-based customers.

We are exposed to certain risks as a result of operating in countries with high levels of inflation.

These risks include the risk that the rate of price increases will not keep pace with the cost of inflation, adverse economic conditions may discourage business growth which could affect demand for our services, the devaluation of the currency may exceed the rate of inflation and reported U.S. dollar revenues and profits may decline, and these countries may be deemed "highly inflationary" for U.S. GAAP purposes.

Effective July 1, 2018, Argentina's economy is considered to be highly inflationary under U.S. GAAP since it has experienced a rate of general inflation in excess of 100% over the latest three-year period, based upon the cumulative inflation rates published by Center for Audit Quality (CAQ) SEC Regulations Committee and its International Practices Task Force (IPTF). As a result, beginning July 1, 2018, the U.S. dollar is the functional currency for the Company's subsidiary in Argentina, Medix I.C.S.A. Accordingly, all gains and losses resulting from the translation of the Company's Argentinian operations are required to be recorded directly in the statement of operations. Through June 30, 2018, prior to being designated as highly inflationary, currency translation adjustments of Medix's balance sheet are reflected in shareholders' equity as part of Other Comprehensive Income; however subsequent to July 1, 2018, such adjustments are reflected in earnings.

The interest rates on our revolving credit facility are priced using a spread over LIBOR.

LIBOR, the London interbank offered rate, is the basic rate of interest used in lending between banks on the London interbank market and is widely used as a reference for setting the interest rate on loans globally. We typically use LIBOR as a reference rate in our term loans such that the interest due to our creditors pursuant to a term loan extended to us is calculated using LIBOR. Most of our term loan agreements contain a stated minimum value for LIBOR.

The Company's credit facility permits interest on the outstanding principal balance to be calculated based on LIBOR. On July 27, 2017, the U.K. Financial Conduct Authority (the "FCA") announced that it will no longer require banks to submit rates for the calculation of LIBOR after 2021 and while work on substitutions is ongoing, considerable uncertainty exists around what will replace LIBOR and how it will be implemented. Actions in the meantime, by the FCA, other regulators, or law enforcement agencies are expected to influence the method by which LIBOR is calculated. At this time, it is not possible to predict the effect of any such changes or any other reforms to LIBOR that may be enacted in the U.K. or elsewhere.

An interruption in or breach of security of our information or manufacturing systems, including the occurrence of a cyber-incident or a deficiency in our cybersecurity, or disclosure of private patient health information, may result in a loss of business or damage to our reputation.

We rely on communications, information and manufacturing systems to conduct our business. Any failure, interruption or cyber incident of these systems could result in failures or disruptions in our customer relationship management or product manufacturing. A cyber incident is an intentional attack or an unintentional event that can include gaining unauthorized access to information systems to disrupt operations, corrupt data, or steal confidential information. The occurrence of any failures, interruptions or cyber incidents could result in a loss of customer business or reputation and have a material effect on our business, financial condition, results of operations and cash flows.

In the course of performing our business we obtain, from time to time, confidential patient health information. For example, we may learn patient names and be exposed to confidential patient health information when we provide training on our products to our customers' staff. Complying with federal and state privacy and security requirements imposes compliance related costs, subjects us to potential regulatory audits, and may restrict our business operations. These various laws may be subject to varying interpretations by courts and government agencies creating potentially complex compliance issues for our business. If we were to violate any of our legal obligations to safeguard any

confidential patient health information or protected health information against improper use and disclosure, we could lose customers and be exposed to liability, and our reputation and business could be harmed. Concerns or allegations about our practices with regard to the privacy or security of personal health information or other privacy-related matters, even if unfounded, could damage our reputation and harm our business.

We are also subject to laws and regulations in foreign countries covering data privacy and other protection of health and employee information that may be more onerous than corresponding U.S. laws. These regulations may require that we obtain individual consent before we collect or process any personal data, restrict our use or transfer of personal data, impose technical and organizational measures to ensure the security of personal data, and require that we notify regulatory agencies, individuals or the public about any data security breaches. As we expand our international operations, we may be required to expend significant

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time and resources to put in place additional mechanisms to ensure compliance with multiple data privacy laws. Failure to comply with these laws may result in significant fines and other administrative penalties and harm our business.

The FDA has issued guidance advising manufacturers to take cybersecurity risks into account in product design for connected medical devices and systems, to assure that appropriate safeguards are in place to reduce the risk of unauthorized access or modification to medical devices that contain software and reduce the risk of introducing threats into hospital systems that are connected to such devices. The FDA also issued guidance on post market management of cyber security in medical devices. Compliance with these requirements may require changes in business practices, complicate our operations, and add complexity and additional management and oversight needs. They also may complicate our clinical research activities, as well as product offerings that involve transmission or use of clinical data.

Failure to comply with laws relating to the confidentiality of sensitive personal information or standards related to the 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 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 security measures, and to notify individuals in the event of privacy and security breaches. Evolving laws and regulations in this area could restrict the ability of our customers to obtain, use or disseminate patient information, or could require us to incur significant additional costs to re-design our products in a timely manner to reflect these legal requirements, either of which could have an adverse impact on our results of operations. Other health information standards, such as regulations under HIPAA, establish standards regarding electronic health data transmissions and transaction code set rules for specified electronic transactions, for example transactions involving submission of claims to their party payors. These standards also continue to evolve and are often unclear and difficult to apply. In addition, under the federal Health Information Technology for Economic and Clinical Health Act, or HITECH Act, some of our businesses that were previously only indirectly subject to federal HIPAA privacy and security rules became directly subject to such rules because the businesses may be deemed to serve as “business associated” to certain of our customers.

Outside the U.S., we are impacted by the privacy and data security requirements at the international, national and regional level, and on an industry specific basis. We serve customers across the globe. Legal requirements in these countries relating to the collection, storage, handling and transfer of personal data and potentially intellectual property continue to evolve with increasingly strict enforcement regimes. More privacy and security laws and regulations are being adopted, and more are being enforced, with potential for significant financial penalties. In the European Union, increasingly stringent data protection and privacy rules that will have substantial impact on the use of patient data across the healthcare industry became effective in May 2018. The new European Union General Data Protection Regulation (“GDPR”) applies uniformly across the European Union and includes, among other things, a requirement for prompt notice of data breaches to data subjects and supervisory authorities in certain circumstances and significant fines for non-compliance. The GDPR also requires companies processing personal data of individuals, including employees, residing in the European Union to comply with European Union privacy and data protection rules. 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.

The personal information that we collect may be vulnerable to breach, theft or loss that could adversely affect our reputation, results of operation and financial condition.

In the ordinary course of our business, we collect, process, transmit and retain personal information regarding our employees and their families, vendors and customers, which can include social security numbers, social insurance numbers, banking and tax identification information, health-care information and credit card information. A third-party may be able to circumvent the security and business controls we use to limit access and use of personal information, which could result in a breach of employee, customer, or vendor's privacy. A major breach, theft or loss

of personal information regarding our employees and their families, vendors or customers that is held by us could result in substantial fines and penalties. For example, the European Union adopted a new regulation that became effective May 2018, called the General Data Protection Regulation (“GDPR”), which requires companies to meet certain requirements regarding the handling of personal data. Failure to meet GDPR requirements could result in penalties of up to 4% of worldwide revenue. As a result of legislative and regulatory rules, we may be required to notify the owners of the personal information of any data breaches, which could harm our reputation and financial results, as well as subject us to litigation or actions by regulatory authorities. Furthermore, media or other reports of existing or perceived security vulnerabilities in our systems, even if no breach has been attempted or has occurred, can adversely impact our brand and reputation, and thereby materially impact our business. Significant capital investments and other expenditures could be required to remedy a breach and prevent future problems, including costs associated with additional security technologies, personnel, experts and credit monitoring services for those whose data has been breached. These costs, which could be material, could adversely impact our

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results of operations during the period in which they are incurred. The techniques and sophistication used to conduct cyber-attacks and breaches, as well as the sources and targets of these attacks, change frequently and are often not recognized until such attacks are launched or have been in place for a period of time. Accordingly, our expenditures to prevent future cyber-attacks and breaches may not be successful.

Healthcare reforms, changes in healthcare policies, and changes to third-party reimbursements for our products may affect demand for our products.

In March 2010 the U. S. government signed into law the Patient Protection and Affordable Care Act and the Health Care & Education Reconciliation Act (collectively, the “ACA”). The ACA contains many provisions designed to generate the revenues necessary to fund the coverage expansions and to reduce costs of Medicare and Medicaid, including imposing a 2.3% excise tax on domestic sales of many medical devices by manufacturers and importers. The Medical Device Excise Tax (“MDET”) went into effect on January 1, 2013 but was suspended for the period January 1, 2016 to December 31, 2017 with the signing of The Consolidated Appropriations Act, 2016 (Pub.L. 114-113).

No action by Congress was taken before the moratorium was set to expire on December 31, 2017. Therefore, MDET was reinstated on January 1, 2018. On January 22, 2018 the U.S. government signed funding bill HR 195 to extend an additional two-year moratorium on the MDET. The moratorium was retroactive to January 1, 2018. Unless there is legislative action prior to 2020, the MDET will automatically reinstate in 2020.

Uncertainty surrounding the ACA and the U.S. healthcare system may impact the way our customers spend on medical devices, supplies, and services in the future. If we fail to effectively react to the implementation of healthcare reform, our business may be adversely affected.

Future changes in technology or market conditions could result in adjustments to our recorded asset balance for intangible assets, including goodwill, resulting in additional charges that could significantly impact our operating results.

Our balance sheet includes significant intangible assets, including goodwill and other acquired intangible assets. The determination of related estimated useful lives and whether these assets are impaired involves significant judgment. Our ability to accurately predict future cash flows related to these intangible assets might be hindered by events over which we have no control. Due to the highly competitive nature of the medical device industry, new technologies could impair the value of our intangible assets if they create market conditions that adversely affect the competitiveness of our products. Further, declines in our market capitalization may be an indicator that our intangible assets or goodwill carrying values exceed their fair values which could lead to potential impairment charges that could impact our operating results. In the past we have recorded charges for goodwill impairment and impairments of our trade names.

We may not be able to preserve the value of our intellectual property because we may not be able to protect access to it or we may lose our intellectual property rights due to expiration of our licenses or patents.

If we fail to protect our intellectual property rights or if our intellectual property rights do not adequately cover the technology we employ, other medical device companies could sell products with features similar to ours, and this could reduce demand for our products. We protect our intellectual property through a combination of patent, copyright, trade secret and trademark laws. Despite our efforts to protect our proprietary rights, others may attempt to copy or otherwise improperly obtain and use our products or technology. Policing unauthorized use of our technology is difficult and expensive, and we cannot be certain that the steps we have taken will prevent misappropriation. Our means of protecting our proprietary rights may be inadequate. Enforcing our intellectual property rights could be costly and time consuming and may divert our management’s attention and resources. Failing to enforce our intellectual property rights could also result in the loss of those rights.

If health-care providers are not adequately reimbursed for procedures conducted with our devices or supplies, or if reimbursement policies change adversely, we may not be successful marketing and selling our products or technologies.

Clinicians, hospitals, and government agencies are unlikely to purchase our products if they are not adequately reimbursed for the procedures conducted with our devices or supplies. Unless a sufficient amount of conclusive, peer-reviewed clinical data about our products has been published, third-party payors, including insurance companies

and government agencies, may refuse to provide reimbursement. Furthermore, even if reimbursement is provided, it may not be adequate to fully compensate the clinicians or hospitals. Some third-party payors may impose restrictions on the procedures for which they will provide reimbursement. If health-care providers cannot obtain sufficient reimbursement from third-party payors for our products or the screenings conducted with our products, we may not achieve significant market acceptance of our products. Acceptance of our products in international markets will depend upon the availability of adequate reimbursement or funding within prevailing healthcare payment systems. Reimbursement, funding, and healthcare payment systems vary significantly by country. We may not obtain approvals for reimbursement in a timely manner or at all.

Adverse changes in reimbursement policies in general could harm our business. We are unable to predict changes in the reimbursement methods used by third-party health-care payors, particularly those in countries and regions outside the U.S. For

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example, some payors are moving toward a managed care system in which providers contract to provide comprehensive healthcare for a fixed cost per person. In a managed care system, the cost of our products may not be incorporated into the overall payment for patient care or there may not be adequate reimbursement for our products separate from reimbursement for other procedures.

Our Peloton hearing screening service is dependent on third-party payors to reimburse us for services provided to patients. We have encountered challenges in obtaining reimbursement from third parties and are dedicating resources to the education of third-party payors to the benefits of these services. Our inability to obtain reimbursement for these services, and any adverse changes in reimbursement policies or amounts for either of these services, or other products or services that we provide, could harm our business.

Our business would be harmed if the FDA determines that we have failed to comply with applicable regulations governing the manufacture of our products and/or we do not pass an inspection.

We and our suppliers are required to demonstrate and maintain compliance with the FDA's Quality System Regulation. The Quality System Regulation sets forth the FDA's requirements for good manufacturing practices of medical devices and includes requirements for, among other things, the design, testing, production processes, controls, quality assurance, labeling, packaging, storage and shipping of such products. In addition, we and our suppliers must engage in extensive recordkeeping and reporting and must make available our manufacturing facility and records for periodic unscheduled inspections by federal, state and foreign agencies, including the FDA. We cannot assure you that we and our suppliers are or will continue to be in full compliance with the Quality System Regulation, and that we will not encounter any manufacturing difficulties.

In 2014 and 2016 we received formal communications from the FDA regarding deficiencies in our manufacturing processes in our Seattle facility. As a result, we imposed ship-holds on certain of our products produced there and have discontinued certain other products produced in that facility. We are dedicating substantial resources to the resolution of the conditions identified by the FDA. These actions had an adverse effect on our results of operations in 2016 and 2017.

Our inability to address issues that have been raised by the FDA, or failure of us or our third party suppliers and manufacturers to comply with applicable regulations could result in sanctions being imposed on us, including, among other things, fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approval of our products, delays, suspension or withdrawal of approvals, seizures or recalls of products and manufacturing restrictions, any of which could harm our business.

If we fail in our efforts to educate clinicians, government agency personnel, and third-party payors about the effectiveness of our products, we may not achieve future sales growth.

It is critical to the success of our sales efforts that we educate a sufficient number of clinicians, hospital administrators, and government agencies about our products and the costs and benefits of their use. The commercial success of our products depends upon clinician, government agency, and other third-party payer confidence in the economic and clinical benefits of our products as well as their comfort with the efficacy, reliability, sensitivity and specificity of our products. We believe that clinicians will not use our products unless they determine, based on published peer-reviewed journal articles and experience, that our products provide an accurate and cost-effective alternative to other means of testing or treatment. Our customers may choose to use competitive products, which may be less expensive or may provide faster results than our devices. Clinicians are traditionally slow to adopt new products, testing practices and clinical treatments, partly because of perceived liability risks and the uncertainty of third-party reimbursement. If clinicians, government agencies and hospital administrators do not adopt our products, we may not maintain profitability. Factors that may adversely affect the medical community's acceptance of our products include:

• Publication of clinical study results that demonstrate a lack of efficacy or cost-effectiveness of our products;

• Changing governmental and physician group guidelines;

• Actual or perceived performance, quality, price, and total cost of ownership deficiencies of our products relative to other competitive products;

• Our ability to maintain and enhance our existing relationships and to form new relationships with leading physicians, physician organizations, hospitals, state laboratory personnel, and third-party payers;

- Changes in federal, state and third-party payer reimbursement policies for our products; and
- Repeal of laws requiring universal newborn hearing screening and metabolic screening. Sales through group purchasing organizations and sales to high volume purchasers may reduce our average selling prices, which could reduce our operating margins.
- We have entered and expect in the future to enter into agreements with customers who purchase a high volume of our products. Our agreements with these customers may contain discounts from our normal selling prices and other special pricing considerations, which could cause our operating margins to decline. In addition, we have entered into agreements to sell our products to members of GPOs, which negotiate volume purchase prices for medical devices and supplies for member hospitals,

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group practices and other clinics. While we make sales directly to GPO members, the GPO members receive volume discounts from our normal selling price and may receive other special pricing considerations from us. Sales to members of all GPOs accounted for approximately 13.3%, 14.5% and 12.3% of our total revenue during 2018, 2017 and 2016, respectively. Certain other existing customers may be members of GPOs with which we do not have agreements. Our sales efforts through GPOs may conflict with our direct sales efforts to our existing customers. If we enter into agreements with new GPOs and some of our existing customers begin purchasing our products through those GPOs, our operating margins could decline.

Consolidation in the healthcare industry could have an adverse effect on our revenues and results of operations. Many healthcare industry companies, include our customers and competitors, are consolidating to create new companies with greater market power. As the healthcare industry consolidates, competition to provide goods and services to our customers could become more intense. Our customers may try to use their market power to negotiate price concessions and our competitors may utilize their size and broad product lines to offer cheaper alternatives to our products. 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.

Demand for some of our products depends on the capital spending policies of our customers, and changes in these policies could harm our business.

A majority of customers for our products are hospitals, physician offices, and clinics. Many factors, including public policy spending provisions, available resources, and economic cycles have a significant effect on the capital spending policies of these entities and therefore the amount that they can spend on our equipment products. If budget resources limit the capital spending of our customers, they will be unlikely to either purchase any new equipment from us or upgrade to any of our newer equipment products. Lack of liquidity in credit markets and uncertainty about future economic conditions can have an adverse effect on the spending patterns of our customers. These factors can have a significant adverse effect on the demand for our products.

Our markets are very competitive and in the United States we sell certain of our products in a mature market. We face competition from other companies in all of our product lines. Our competitors range from small privately held companies to multinational corporations and their product offerings vary in scope and breadth. We do not believe that any single competitor is dominant in any of our product lines.

The markets for certain of our products in the U.S., including the newborn hearing screening and EEG monitoring markets, are mature and we are unlikely to see significant growth for such products in the U.S. The market for newborn care products is affected by birthrates, and a declining U.S. birthrate has adversely affected our operating results in recent periods. In the U.S. we derive a significant portion of our revenue from the sale of disposable supplies that are used with our hearing screening devices. Our hearing disposable supply products could face increasing competition, including competitors offering lower prices, which could have an adverse effect on our revenue and margins.

Our competitors may have certain competitive advantages, which include the ability to devote greater resources to the development, promotion, and sale of their products. Consequently, we may need to increase our efforts, and related expenses for research and development, marketing, and selling to maintain or improve our position.

We expect recurring sales to our existing customers to generate a majority of our revenue in the future, and if our existing customers do not continue to purchase products from us, our revenue may decline.

In October 2017 we completed the acquisition of our neurosurgery business from Integra LifeSciences. We are relying on Integra LifeSciences for certain transition services to support the acquired business and at the same time we are competing with them in the sale of neurosurgery products. Integra LifeSciences may face conflicting interests in performing required services for us and this may result in adverse effects on the acquired business.

We have substantial international operations which are subject to numerous risks; if our international operations are not successful, our business will be adversely affected.

In 2018, approximately 43.3% of our sales were made outside the U.S. We plan to expand our international sales and marketing efforts to increase sales of our products in foreign countries. We may not realize corresponding growth in revenue from growth in international unit sales, due to the lower average selling prices we receive on sales outside of the U.S. Even if we are able to successfully expand our international selling efforts, we cannot be certain that we will

be able to create or increase demand for our products outside of the U.S. Our international operations are subject to other risks, which include:

• Impact of possible recessions in economies outside the U.S.;

• Political and economic instability, including instability related to war and terrorist attacks and to political and diplomatic matters such as the BREXIT of the United Kingdom from the European Union;

• Adverse changes in tariffs and trade protection measures;

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- Difficulty in obtaining and maintaining foreign regulatory approval and complying with foreign regulations, including the EU Medical Device Regulation;
- Contractual provisions governed by foreign law, such as local law rights to sales commissions by terminated distributors;
- Decreased healthcare spending by foreign governments that would reduce international demand for our products;
- Strengthening of the U.S. dollar relative to foreign currencies that could make our products less competitive because approximately half of our international sales are denominated in U.S. dollars;
- Changes in capital and exchange controls affecting international trade;
- Greater difficulty in accounts receivable collection and longer collection periods;
- Difficulties of staffing and managing foreign operations;
- Reduced protection for intellectual property rights in some countries and potentially conflicting intellectual property rights of third parties under the laws of various foreign jurisdictions;
- Attitudes by clinicians, and cost reimbursement policies, towards use of disposable supplies that are potentially unfavorable to our business;
- Complying with U.S. regulations that apply to international operations, including trade laws, the U.S. Foreign Corrupt Practices Act, and anti-boycott laws, as well as international laws such as the U.K. Bribery Act;
- Loss of business through government tenders that are held annually in many cases; and
- Potentially negative consequences from changes in tax laws, including legislative changes concerning taxation of income earned outside of the U.S.

In particular, our international sales could be adversely affected by a strengthening of the U.S. dollar relative to other foreign currencies, which makes our products more costly to international customers for sales denominated in U.S. dollars.

The recently passed comprehensive U.S. tax reform legislation could materially affect our business and financial condition.

The Tax Cuts and Jobs Act (the “Tax Act”) was signed into law in December 2017. The new law made numerous changes to federal corporate tax law that we expect will impact our effective tax rate in future periods. The changes included in the Tax Act are broad and complex. The final transition impacts of the Tax Act may differ from our current estimates, possibly materially, due to, among other things, changes in interpretations of the Tax Act, any legislative action to address questions that arise because of the Tax Act, any changes in accounting standards for income taxes or related interpretations in response to the Tax Act, or any updates or changes to estimates the Company has utilized to calculate the transition impacts.

If guidelines mandating universal newborn hearing screening do not continue to develop in foreign countries and governments do not mandate testing of all newborns as we anticipate, or if those guidelines have a long phase-in period, our sales of newborn hearing screening products may not achieve the revenue growth we have achieved in the past.

We estimate that approximately 95% of the children born in the U.S. are currently being tested for hearing impairment prior to discharge from the hospital. To date, there has been only limited adoption of newborn hearing screening prior to hospital discharge by foreign governments, and when newborn hearing screening programs are enacted by foreign governments there can be a phase-in period spanning several years. The widespread adoption of guidelines depends, in part, on our ability to educate foreign government agencies, neonatologists, pediatricians, third-party payors, and hospital administrators about the benefits of universal newborn hearing screening as well as the use of our products to perform the screening and monitoring. Our revenue from our newborn hearing screening product lines may not grow if foreign governments do not require universal newborn hearing screening prior to hospital discharge, if physicians or hospitals are slow to comply with those guidelines, or if governments provide for a lengthy phase-in period for compliance.

Because we rely on distributors or sub-distributors to sell our products in most of our markets outside of the U.S., our revenue could decline if our existing distributors reduce the volume of purchases from us, or if our relationship with any of these distributors is terminated.

We currently rely on our distributors or sub-distributors for a majority of our sales outside the U.S. Some distributors also assist us with regulatory approvals and education of clinicians and government agencies. Our contracts with our distributors or sub-distributors do not assure us significant minimum purchase volume. If a contract with a distributor or sub-distributor is terminated for cause or by us for convenience, the distributor or sub-distributor will have no obligation to purchase products from us. We intend to continue our efforts to increase our sales in Europe, Japan, and other developed countries. If we fail to sell our products through our international distributors, we would experience a decline in revenue unless we begin to sell our products directly in those markets. We cannot be certain that we will be able to attract new international distributors to market our products effectively or provide timely and cost-effective customer support and service. Even if we are successful in selling our products

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through new distributors, the rate of growth of our revenue could be harmed if our existing distributors do not continue to sell a large dollar volume of our products. None of our existing distributors are obligated to continue selling our products.

We may be subject to foreign laws governing our relationships with our international distributors. These laws may require us to make payments to our distributors if we terminate our relationship for any reason, including for cause. Some countries require termination payments under local law or legislation that may supersede our contractual relationship with the distributor. Any required payments would adversely affect our operating results.

If we lose our relationship with any supplier of key product components or our relationship with a supplier deteriorates or key components are not available in sufficient quantities, our manufacturing could be delayed and our business could suffer.

We contract with third parties for the supply of some of the components used in our products and the production of our disposable products. Some of our suppliers are not obligated to continue to supply us. We have relatively few sources of supply for some of the components used in our products and in some cases we rely entirely on sole-source suppliers. In addition, the lead-time involved in the manufacturing of some of these components can be lengthy and unpredictable. If our suppliers become unwilling or unable to supply us with components meeting our requirements, it might be difficult to establish additional or replacement suppliers in a timely manner, or at all. This would cause our product sales to be disrupted and our revenue and operating results to suffer.

Replacement or alternative sources might not be readily obtainable due to regulatory requirements and other factors applicable to our manufacturing operations. Incorporation of components from a new supplier into our products may require a new or supplemental filing with applicable regulatory authorities and clearance or approval of the filing before we could resume product sales. This process may take a substantial period of time, and we may not be able to obtain the necessary regulatory clearance or approval. This could create supply disruptions that would harm our product sales and operating results.

We depend upon key employees in a competitive market for skilled personnel, and, without additional employees, we cannot grow or maintain profitability.

Our products and technologies are complex, and we depend substantially on the continued service of our senior management team. The loss of any of our key employees could adversely affect our business and slow our product development process. The successful implementation of our "One Natus" organizational structure also depends on key employees. Our future success will depend, in part, on the continued service of our key management personnel, software engineers, and other research and development employees, and our ability to identify, hire, and retain additional personnel, including customer service, marketing, and sales staff. Demand for these skilled employees in our industry is very competitive due to the limited number of people available with the necessary technical skills and understanding of our product technologies. We may be unable to attract and retain personnel necessary for the development of our business.

Our ability to market and sell products depends upon receipt of domestic and foreign regulatory approval of our products and manufacturing operations. Our failure to obtain or maintain regulatory approvals and compliance could negatively affect our business.

Our products and manufacturing operations are subject to extensive regulation in the United States by the FDA and by similar regulatory agencies in other countries. Our products are classified as medical devices. Medical devices are subject to extensive regulation by the FDA pursuant to regulations that are wide ranging and govern, among other things: design and development; manufacturing and testing; labeling; storage and record keeping; advertising, promotion, marketing, sales distribution and export; and surveillance and reporting of deaths or serious injuries. Unless an exemption applies, each medical device that we propose to market in the U.S. must first receive one of the following types of FDA premarket review authorizations:

• Clearance via Section 510(k) of the Food, Drug, and Cosmetics Act of 1938, as amended; or

• Premarket approval via Section 515 of the Food, Drug, and Cosmetics Act if the FDA has determined that the medical device in question poses a greater risk of injury.

The FDA will clear marketing of a medical device through the 510(k) process if it is demonstrated that the new product is substantially equivalent to other 510(k)-cleared products. The premarket approval application process is

much more costly, lengthy and uncertain than the 510(k) process, and must be supported by extensive data from preclinical studies and human clinical trials. The FDA may not grant either 510(k) clearance or premarket approval for any product we propose to market. Further, any modification to a 510(k)-cleared device that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, design or manufacture, requires a new 510(k) clearance or, possibly, approval of a premarket approval application. The FDA requires every manufacturer to make this determination in the first instance, but the FDA may review any manufacturer's decision. If the FDA requires us to seek 510(k) clearance or premarket approval for modification of a previously cleared product for which we have concluded that new clearances or approvals are unnecessary, we may be required to cease

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marketing or to recall the modified product until we obtain clearance or approval, and we may be subject to significant regulatory fines or penalties. Further, our products could be subject to recall if the FDA determines, for any reason, that our products are not safe or effective.

Delays in receipt of, or failure to receive, clearances or approvals, the loss of previously received clearances or approvals, or the failure to comply with existing or future regulatory requirements could adversely impact our operating results. If the FDA finds that we have failed to comply with these requirements, the FDA can institute a wide variety of enforcement actions, ranging from a public warning letter to more severe sanctions such as:

• Fines, injunctions and civil penalties;

• Recall or seizure of our products;

• Issuance of public notices or warnings;

• Imposition of operating restrictions, partial suspension, or total shutdown of production;

• Refusal of our requests for Section 510(k) clearance or premarket approval of new products;

• Withdrawal of Section 510(k) clearance or premarket approvals already granted;

• Criminal prosecution;

Domestic regulation of our products and manufacturing operations, other than that which is administered by the FDA, includes the Environmental Protection Act, the Occupational Safety and Health Act, and state and local counterparts to these Acts; or

Foreign governments and regulatory authorities have, and may continue to, propose and implement regulations that apply to our products and operations. For example, in 2017 the European Union adopted the EU Medical Device Regulation, which imposes stricter requirements for the marketing and sale of medical devices, including new quality system and post-market surveillance requirements once it is fully implemented in 2020. Penalties for regulatory non-compliance could be severe, including fines and revocation or suspension of a company's business license, mandatory price reductions, and criminal sanctions. Future laws and regulations may have a material adverse effect on our business.

Our business may suffer if we are required to revise our labeling or promotional materials, or if the FDA takes an enforcement action against us for off-label uses.

We are prohibited by the FDA from promoting or advertising our medical device products for uses not within the scope of our clearances or approvals, or from making unsupported promotional claims about the benefits of our products. If the FDA determines that our claims are outside the scope of our clearances, or are unsupported, it could require us to revise our promotional claims or take enforcement action against us. If we were subject to such an action by the FDA, our sales could be delayed, our revenue could decline, and our reputation among clinicians could be harmed. Likewise, if we acquire new products, either through the purchase of products, technology assets, or businesses, that are subsequently deemed to have inadequate supporting data, we may be required to (i) obtain adequate data, which could be costly and impede our ability to market these products, or (ii) modify the labeling on these products, which could impair their marketability, as described above.

If we deliver products with defects, we may incur costs to repair and, possibly, recall that product and market acceptance of our products may decrease.

The manufacturing and marketing of our products involve an inherent risk of our delivering a defective product or products that do not otherwise perform as we expect. We may incur substantial expense to repair any such products and may determine to recall such a product, even if not required to do so under applicable regulations. Any such recall would be time consuming and expensive. Product defects or recalls may adversely affect our customers' acceptance of the recalled and other of our products.

If we fail to comply with healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.

We could be subject to healthcare fraud regulation and enforcement by both the federal government and the states in which we conduct our business. The laws that may affect our ability to operate include: (i) the federal healthcare programs Anti-Kickback Law, which prohibits, among other things, persons from knowingly and willfully soliciting, receiving, offering or paying remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made

under federal healthcare programs such as Medicare or Medicaid, (ii) federal false claims laws which prohibit, among other things, individuals or entities from knowingly presenting, or causing to be presented, claims for payment from Medicare, Medicaid, or other third-party payors that are false or fraudulent, and which may apply to entities like us which provide coding and billing advice to customers, and/or (iii) state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any

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third-party payor, including commercial insurers, many of which differ from their federal counterparts in significant ways, thus complicating compliance efforts.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. The risk of our being found in violation of these laws is increased by the fact that their provisions are open to a variety of interpretations. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business.

Our operating results would suffer if we were subject to a protracted infringement claim.

The medical technology industry is characterized by a substantial amount of litigation and related administrative proceedings regarding patents and intellectual property rights. We expect that medical screening and diagnostic products may become increasingly subject to third-party infringement claims as the number of competitors in our industry grows and the functionality of products overlap. Third parties such as individuals, educational institutions, or other medical device companies may claim that we infringe their intellectual property rights. Any claims, with or without merit, could have any of the following negative consequences:

Result in costly litigation and damage awards;

Divert our management's attention and resources;

Cause product shipment delays or suspensions; or

Require us to seek to enter into royalty or licensing agreements.

We are currently subject to cases based on third-party patent infringement claims. A successful claim of infringement against us from any current or future claim could result in a substantial damage award and materially harm our financial condition. Our failure or inability to license the infringed or similar technology, or design and build non-infringing products, could prevent us from selling our products and adversely affect our business and financial results.

We may also find it necessary to bring infringement actions against third parties to seek to protect our intellectual property rights. Litigation of this nature, even if successful, is often expensive and disruptive of our management's attention, and in any event may not lead to a successful result relative to the resources dedicated to any such litigation. We license intellectual property rights from third parties and would be adversely affected if our licensors do not appropriately defend their proprietary rights or if we breach any of the agreements under which we license commercialization rights to products or technology from others.

We license rights from third parties for products and technology that are important to our business. If our licensors are unsuccessful in asserting and defending their proprietary rights, including patent rights and trade secrets, we may lose the competitive advantages we have through selling products that we license from third parties. Additionally, if it is found that our licensors infringe on the proprietary rights of others, we may be prohibited from marketing our existing products that incorporate those proprietary rights. Under our licenses, we are subject to commercialization and development, sublicensing, royalty, insurance and other obligations. If we fail to comply with any of these requirements, or otherwise breach a license agreement, the licensor may have the right to terminate the license in whole or to terminate the exclusive nature of the license.

Product liability suits against us could result in expensive and time consuming litigation, payment of substantial damages, and an increase in our insurance rates.

The sale and use of our products could lead to the filing of a product liability claim by someone claiming to have been injured using one of our products or claiming that one of our products failed to perform properly. We are currently subject to one such lawsuit. A product liability claim could result in substantial damages and be costly and time consuming to defend, either of which could materially harm our business reputation or financial condition. Our product liability insurance may not protect our assets from the financial impact of defending a product liability claim. 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.

We have experienced seasonality in the sale of our products.

We experience seasonality in our revenue. For example, our sales typically decline from the second half of our fiscal year to the first half of the fiscal year, due to patterns in the capital budgeting and purchasing cycles of our customers, many of which are government agencies, and the compensation arrangements of our direct sales employees, as those arrangements are tied to calendar-year sales plans. We anticipate that we will continue to experience seasonal fluctuations, which may lead to fluctuations

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in our quarterly operating results. We believe that you should not rely on our results of operations for interim periods as an indication of our expected results in any future period.

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

Our corporate headquarters are located in Pleasanton, California, in a facility covering 8,200 square feet pursuant to a lease that expires in October 2019.

We also utilize the following properties:

Company-owned Facilities:

- 16,000 square feet in Buenos Aires, Argentina, utilized substantially for manufacturing;
- 44,900 square feet in Oakville, Ontario, Canada, utilized substantially for research and development;
- 42,600 square feet in Gort, Ireland, utilized substantially for manufacturing; and
- 6,400 square feet in Old Woking, England, utilized substantially for research and development.

Leased Facilities:

Following is a listing of our most significant leased properties; we have a number of smaller facilities under lease in various countries where we operate.

• 124,000 square feet in Middleton, Wisconsin, pursuant to a lease that expires in April 2024, that is primarily utilized for manufacturing;

• 65,000 square feet in Seattle, Washington, pursuant to a lease that expires in December 2020, that is utilized substantially for manufacturing;

• 52,000 square feet in Taastrup, Denmark, pursuant to a lease with the option to terminate with six months-notice beginning January 2022, that is utilized for manufacturing, research and development, marketing and sales, and general and administrative;

• 43,000 square feet in Planegg, Germany, pursuant to a lease that expires in December 2021 that is utilized substantially for sales and marketing and a large portion is subleased to third parties;

• 37,282 square feet in San Diego, California, pursuant to a lease that expires in June 2022, that is utilized substantially for manufacturing;

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25,128 square feet in Schaumburg, Illinois, pursuant to a lease that expires in July 2021, that is utilized substantially for marketing and sales; and

23,860 square feet in Quebec, Canada, pursuant to a lease that expires in December 2023, that is utilized substantially for manufacturing.

ITEM 3. Legal Proceedings

We may from time to time become a party to various legal proceedings or claims that arise in the ordinary course of business. We are not currently involved in any legal or administrative proceedings that we believe are likely to have a material effect on our business, financial condition, or results of operations, although we cannot be assured of the outcome of such matters.

In January 2017, a putative class action lawsuit (Badger v. Natus Medical Incorporation, et al., No. 17-cv-00458-JSW) alleging violations of federal securities laws was filed in the United States District Court for the Northern District of California, naming as defendants the Company and certain officers and a director. In July 2017, plaintiffs filed an amended complaint with a new lead plaintiff (Costabile v. Natus Medical Incorporation, et al., No. 17-cv-00458-JSW) alleging violations of federal securities laws based on allegedly false and misleading statements. The defendants moved to dismiss the Amended Complaint, and in February 2018 the motion to dismiss was granted with leave to amend. The plaintiffs re-filed an amended complaint in April 2018 and Natus responded in May 2018. In December 2018, the Amended Complaint was again dismissed with leave to amend. The Company continues to believe that the plaintiffs' allegations are without merit, and intended to vigorously defend against the claims.

ITEM 4. Mine Safety Disclosures

The disclosure required by this item is not applicable.

PART II

ITEM 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our common stock trades on the Nasdaq Global Select Market under the symbol "BABY". The following table sets forth, for the periods indicated, the high and low sale price per share of our common stock, as reported on the Nasdaq Global Select Market.

	High	Low
Fiscal Year Ended December 31, 2018:		
Fourth Quarter	\$36.85	\$27.69
Third Quarter	37.90	31.05
Second Quarter	37.95	31.10
First Quarter	39.25	28.00
Fiscal Year Ended December 31, 2017:		
Fourth Quarter	\$43.60	\$37.10
Third Quarter	39.50	31.65
Second Quarter	41.25	33.28
First Quarter	39.75	33.55

As of February 20, 2019, there were 33,777,388 shares of our common stock issued and outstanding and held by approximately 105 stockholders of record. We estimate that there are approximately 18,758 beneficial owners of our common stock.

Dividends

We have never declared or paid cash dividends on our capital stock and do not anticipate paying any cash dividends in the foreseeable future.

Stock Performance Graph

The following information of Part II Item 5 is being furnished and shall not be deemed to be "soliciting material" or to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or otherwise subject to the liabilities of

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that Section, nor will it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, except to the extent that we specifically incorporate such information by reference thereto.

The following graph shows a comparison, from January 1, 2014 through December 31, 2018, of cumulative total return for our common stock, the Nasdaq Composite Index and the Standard & Poor's 500 Health Care Equipment Index. Such returns are based on historical results and are not intended to suggest future performance. Data for the Nasdaq Composite Index and the Standard & Poor's 500 Health Care Equipment Index assumes reinvestment of dividends.

		2013	2014	2015	2016	2017	2018
Natus Medical Inc.	Return %		60.18	33.32	(27.58)	9.77	(10.90)
	Cum \$	100.00	160.18	213.56	154.67	169.78	151.24
NASDAQ Composite-Total Returns	Return %		14.75	6.96	8.87	29.64	(2.84)
	Cum \$	100.00	114.75	122.74	133.62	173.22	168.30
S&P 500 Health Care Equipment Index	Return %		26.28	5.97	6.48	30.90	16.24
	Cum \$	100.00	126.28	133.82	142.50	186.53	216.82

Purchases of Equity Securities by the Issuer

The following table provides information regarding repurchases of common stock for the year ended December 31, 2018.

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Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Plans or Programs
February 1, 2018—February 28, 2018	29,722	\$ 31.23	29,722	\$ 29,071,782
March 1, 2018—March 31, 2018	118,171	\$ 32.19	147,893	\$ 25,271,403
June 1, 2018—June 30, 2018	25,652	\$ 34.79	173,545	\$ 24,378,970
Total	173,545	\$ 32.41	173,545	\$ 24,378,970

On February 22, 2018, the Board of Directors authorized the repurchase of up to \$30 million in common stock with an expiration date of February 26, 2019.

ITEM 6. Selected Financial Data

The following tables set forth certain selected consolidated financial data for each of the years in the five-year period ended December 31, 2018, and is derived from the Consolidated Financial Statements of Natus Medical Incorporated and its subsidiaries. The Consolidated Financial Statements for each of the years in the three-year period ended December 31, 2018 are included elsewhere in this report. The selected consolidated balance sheet data as of December 31, 2016, 2015 and 2014 and the consolidated statements of operations data for the years ended December 31, 2015 and 2014 are derived from our Consolidated Financial Statements, which are not included in this report. The selected consolidated financial data set forth below is qualified in its entirety by, and should be read in conjunction with, the Consolidated Financial Statements and Notes thereto and “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included elsewhere in this report.

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	Year ended December 31,				
	2018	2017	2016	2015	2014
	(in thousands, except per share amounts)				
Consolidated Statement of Operations Data (a):					
Revenue	\$530,891	\$500,970	\$381,892	\$375,865	\$355,834
Cost of revenue	217,952	213,376	144,632	145,492	138,480
Intangibles amortization	8,924	6,380	2,327	2,836	2,967
Gross profit	304,015	281,214	234,933	227,537	214,387
Operating expenses:					
Marketing and selling	136,680	126,166	84,834	87,675	85,729
Research and development	61,482	51,822	33,443	30,434	30,100
General and administrative	70,599	74,424	50,877	46,363	45,444
Intangibles amortization	22,585	19,171	8,983	7,447	3,025
Restructuring	37,231	914	1,536	2,145	4,238
Total operating expense	328,577	272,497	179,673	174,064	168,536
Income from operations	(24,562)	8,717	55,260	53,473	45,851
Other income (expense), net	(7,698)	(3,567)	(357)	(1,064)	158
Income before provision for income tax	(32,260)	5,150	54,903	52,409	46,009
Provision for income tax	(9,325)	25,443	12,309	14,485	13,531
Net income (loss)	\$(22,935)	\$(20,293)	\$42,594	\$37,924	\$32,478
Earnings per share:					
Basic	\$(0.69)	\$(0.62)	\$1.31	\$1.17	\$1.03
Diluted	\$(0.69)	\$(0.62)	\$1.29	\$1.14	\$1.00
Weighted average shares used in the calculation of earnings per share:					
Basic	33,111	32,564	32,460	32,348	31,499
Diluted	33,111	32,564	33,056	33,241	32,568

December 31,
2018 2017 2016 2015 2014
(in thousands)

Consolidated Balance Sheet Data:

Cash, cash equivalents, and short-term investments	\$56,373	\$88,950	\$247,750	\$82,469	\$66,558
Working capital	152,329	213,491	325,858	164,248	148,665
Total assets	638,140	709,919	649,012	479,496	434,821
Long-term debt (including current portion) and short-term borrowings	105,000	154,283	140,000	—	—
Total stockholders' equity	398,444	422,097	417,374	390,710	352,715

Results of operations and financial position of the businesses we have acquired are included from their acquisition dates as follows: Peloton in January 2014, GND and NICVIEW in January 2015, Monarch in November 2015, (a) NeuroQuest in March 2016, RetCam in July 2016, Otometrics in January 2017, and Integra Asset Acquisition in October 2017.

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

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") should be read in conjunction with the Consolidated Financial Statements and the accompanying footnotes. MD&A includes the following sections:

Business

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Natus is a leading provider of neurology, newborn care, and hearing and balance assessment healthcare products and services used for the screening, diagnosis, detection, treatment, monitoring and tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction, neurosurgery, epilepsy, sleep disorders, neuromuscular diseases and balance and mobility disorders.

Year 2018 Overview

Our consolidated revenue increased by \$29.9 million for the year ended December 31, 2018 compared to the year ended December 31, 2017. This increase was driven by the addition of our Neurosurgery business, organic growth in our Otometrics business unit, offset by a decline in Newborn Care driven by non-recurring orders from the prior year and product line rationalization.

Net loss was \$22.9 million, or \$0.69 per share in the year ended December 31, 2018, compared with net loss of \$20.3 million, or \$0.62 per diluted share in 2017. This decrease in income was primarily the result of restructuring expenses of \$37.2 million incurred in 2018 related to costs associated with the Company's executive management transition and goodwill impairment charge related to our GND business. These restructuring expenses were offset by a reduction in tax expense in 2018 of \$34.7 million compared to 2017. The reduction in tax expense was driven by a one-time tax cost of \$20.5 million in 2017 relating to the transition tax on the deemed repatriation of all foreign subsidiary earnings (excluding state and FIN 48 tax impacts) and a non-cash charge to establish a valuation allowance against a significant portion of the U.S. deferred tax assets related to carryforward of foreign tax credits, each due to the enactment in December 2017 of Tax Cuts and Jobs Act of 2017 (the "Act"). Partially offsetting this non-recurring tax cost in 2017, the reduction of the U.S. Federal tax rate from 35% to 21% percent in 2018 resulted in lower tax expense of \$8.6 million.

Recent Developments

On January 15, 2019, Natus announced the implementation of a new organizational structure designed to improve operational performance and make it a stronger, more profitable company.

Natus intends to consolidate its three business units, Neuro, Newborn Care and Otometrics into "One Natus." This initiative is designed to create a single, unified company with globally led operational teams in Sales & Marketing, Manufacturing, R&D, Quality, and General and Administrative functions. The new structure is expected to provide for increased transparency, efficiency and cross-functional collaboration across common technologies, processes and customer channels.

Natus expects to transition to the new structure with further implementation stages continuing throughout 2019.

The description of Natus' strategic business units that is contained in this Annual Report describes such strategic business units as they existed during the fiscal year ended December 31, 2018.

Application of Critical Accounting Policies

We prepare our financial statements in accordance with accounting principles generally accepted in the United States of America ("GAAP"). In so doing, we must often make estimates and use assumptions that can be subjective and, consequently, our actual results could differ from those estimates. For any given individual estimate or assumption we make, there may also be other estimates or assumptions that are reasonable.

We believe that the following critical accounting policies require the use of significant estimates, assumptions, and judgments. The use of different estimates, assumptions, and judgments could have a material effect on the reported amounts of assets, liabilities, revenue, expenses, and related disclosures as of the date of the financial statements and during the reporting period.

Revenue recognition

Revenue is recognized when obligations under the terms of a contract with a customer are satisfied; generally this occurs with the transfer of control of devices, supplies, or services. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring goods or providing services.

For the majority of devices and supplies, the Company transfers control and recognizes revenue when products ship from the warehouse to the customer. The Company generally does not provide rights of return on devices and supplies. Freight charges billed to customers are included in revenue and freight-related expenses are charged to cost of revenue.

Depending on the terms of the arrangement, the Company may also defer the recognition of a portion of the consideration received because it has to satisfy a future obligation (e.g. installation). Judgment is required to determine the standalone selling price (“SSP”) for each distinct performance obligation. The Company’s estimate of SSP is a point estimate. The estimate is

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calculated annually for each performance obligation that is not sold separately. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, the SSP is determined using information that may include market conditions and other observable inputs.

The Company sells separately-priced service contracts that extend maintenance coverages for both medical devices and data management systems beyond the base agreements to customers. The separately priced service contracts range from 12 months to 36 months. The Company receives payment at the inception of the contract and recognizes revenue ratably over the service period.

For products containing embedded software, the Company determined the hardware and software components function together to deliver the products' essential functionality and are considered a combined performance obligation. Revenue recognition policies for sales of these products are substantially the same as for other tangible products.

Acquisition Accounting

We have made a number of acquisitions in the past and may continue to make acquisitions in the future. We account for acquired business combinations using the acquisition method of accounting. The assets acquired and liabilities assumed are recorded based on their respective fair values at the date of acquisition, with limited exceptions.

Valuations are generally completed for business acquisitions using a discounted cash flow analysis. The most significant estimates and assumptions inherent in a discounted cash flow analysis include the amount and timing of projected future cash flows, the discounted rate used to measure the risks inherent in the future cash flows, the assessment of the asset's life cycle, and the competitive and other trends impacting the asset, including consideration of technical, legal, regulatory, economic and other factors. Each of these factors and assumptions can significantly affect the value of the intangible asset. The excess of the fair value of consideration transferred over the fair value of the net assets acquired is recorded as goodwill.

Determining the useful life of an intangible asset also requires judgment, as different types of intangibles assets will have different useful lives and certain assets may even be considered to have indefinite useful lives. Useful life is the period over which the intangible asset is expected to contribute directly and indirectly to our future cash flows. We determine the useful lives of intangible assets based on a number of factors, such as legal, regulatory, or contractual provisions that may limit the useful life, and the effects of obsolescence, anticipated demand, existence or absence of competition, and other economic factors on useful life.

Income Taxes

We account for income taxes under the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, and for tax losses and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. In assessing the realizability of deferred tax assets, management considers whether it is more likely than not that some portion or all of the deferred tax assets will not be realized.

We may record a valuation allowance if, based on all available positive and negative evidence, we determine that some portion of the deferred tax assets may not be realized prior to expiration. If we determine that we may be able to realize our deferred tax assets in the future excess of their net recorded amount, we would release the valuation allowance and recognize a discrete tax benefit during the period in which the determination was made.

As part of the process of preparing our consolidated financial statements, we must estimate our income tax expense for each of the jurisdictions in which we operate. This process requires significant management judgments and involves estimating our current tax exposures in each jurisdiction including the impact, if any, of additional taxes resulting from tax examinations as well as judging the recoverability of deferred tax assets. To the extent recovery of deferred tax assets is not likely based on our estimation of future taxable income in each jurisdiction, a valuation allowance is established. Tax exposures can involve complex issues and may require an extended period to resolve. Frequent changes in tax laws in each jurisdiction complicate future estimates. To determine the tax rate, we are

required to estimate full-year taxable income or loss and the related income tax expense or benefit in each jurisdiction. We update the estimated effective tax rate for the effect of significant unusual items as they are identified. Changes in the geographic mix or estimated level of annual pre-tax income can affect the overall effective tax rate, and such changes could be material.

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We recognize tax benefits from uncertain tax positions only if we believe that it is more likely than not that the tax position will be sustained on examination by the taxing authorities on the technical merits of the positions. Although we believe that we have adequately reserved for our uncertain tax positions (including net interest and penalties), we can provide no assurance that the final tax outcome of these matters will not be materially different. We make adjustment to these reserves in accordance with the income tax accounting guidance as a result of any changes in facts and circumstances. To the extent that the final tax outcome of these matters is different from the amounts recorded, such differences will affect the provision for income taxes in the period in which such determination is made, and could have a material impact on our financial results.

Inventory

Inventories are carried at the lower of cost or net realizable value, with cost being determined using the first-in, first-out method. The carrying value of the Company's inventories is reduced for any difference between cost and estimated net realizable value of the inventory. We determine net realizable value by evaluating ending inventories for excess quantities, obsolescence, and other factors that could impact our ability to consume inventory for its intended use. Our evaluation of includes an analysis of historical sales by product, projections of future demand by product, and an analysis of obsolescence by product. Adjustments to the value of inventory establish a new cost basis and are considered permanent even if circumstances later suggest that increased carrying amounts are recoverable. If demand is higher than expected, Natus may sell inventory that had previously been written down.

Results of Operations

The following table sets forth for the periods indicated selected consolidated statement of income data as a percentage of total revenue. Our historical operating results are not necessarily indicative of the results for any future period.

	Percent of Revenue					
	Years Ended December 31,					
	2018	2017	2016			
Revenue	100.0	%	100.0	%	100.0	%
Cost of revenue	41.1	%	42.6	%	37.9	%
Intangibles amortization	1.7	%	1.3	%	0.6	%
Gross profit	57.3	%	56.1	%	61.5	%
Operating expenses:						
Marketing and selling	25.7	%	25.2	%	22.2	%
Research and development	11.6	%	10.3	%	8.8	%
General and administrative	13.3	%	14.9	%	13.3	%
Intangibles amortization	4.3	%	3.8	%	2.4	%
Restructuring	7.0	%	0.2	%	0.4	%
Total operating expenses	61.9	%	54.4	%	47.0	%
Income (loss) from operations	(4.6)%	1.7	%	14.5	%
Other expense, net	(1.5)%	(0.7)%	(0.1)%
Income before provision for income tax	(6.1)%	1.0	%	14.4	%
Provision for income tax expense	(1.8)%	5.1	%	3.2	%
Net income (loss)	(4.3)%	(4.1)%	11.2	%

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Comparison of 2018 and 2017

Revenue

	Years ended December 31,		
	2018	2017	Change
Neuro			
Devices and Systems	\$200,767	\$171,315	17 %
Supplies	67,032	59,955	12 %
Services	12,000	11,886	1 %
Total Neuro Revenue	279,799	243,156	15 %
Newborn Care			
Devices and Systems	63,549	77,573	(18)%
Supplies	39,622	43,732	(9)%
Services	20,396	22,325	(9)%
Total Newborn Care Revenue	123,567	143,630	(14)%
Otometrics			
Devices and Systems	\$119,269	\$107,769	11 %
Supplies	8,256	6,415	29 %
Services	—	—	— %
Total Otometrics Revenue	127,525	114,184	12 %
Total Revenue	\$530,891	\$500,970	6 %

For the year ended December 31, 2018, Neuro revenue increased by 15% compared to the prior year. Devices and Systems revenue increased by 17% compared to the prior year due primarily to the addition of acquired Neurosurgery products and growth in EEG sales. Supplies revenue for 2018 increased 12% which was also driven by the addition of our Neurosurgery business and organic growth in our Neurodiagnostic supply business. Services revenue from GND increased 1% compared to the prior year.

For the year ended December 31, 2018, Newborn Care revenue decreased by 14% compared to the prior year. Devices and Systems revenue decreased by 18%. The decrease is primarily due to the recognition of \$10.0 million of revenue in the first half of 2017 from our contract with the government of Venezuela which did not reoccur in 2018. We also experienced a one-time shipment of neoBLUE blanket backlog in the first quarter of 2017 and a one-time shipment of hearing devices and supplies to China, Japan, and Australia in the second quarter of 2017. Supplies revenue decreased 9% compared to the prior year related to revenue contract with the government of Venezuela, which did not reoccur in 2018, as well as product line rationalization. Services revenue decreased by 9% compared to the prior year primarily due to a lower collection per screen on our Peloton hearing screening service.

For the year ended December 31, 2018, Otometrics revenue increased 12% compared to the prior year. Revenue from Devices and Systems increased 11% and revenue from Supplies increased 29% in 2018 compared to 2017. The overall growth in Otometrics was driven by increased market share primarily in Europe and China. In addition to increased market share, Otometrics also benefited from favorable exchanges rates and the launch of our new Otoscan® product in 2018.

Cost of Revenue and Gross Profit

	Years ended	
	December 31,	
	2018	2017
Revenue	\$530,891	\$500,970
Cost of revenue	217,952	213,376
Intangibles amortization	8,924	6,380
Gross profit	304,015	281,214
Gross profit percentage	57.3 %	56.1 %

For the year ended December 31, 2018, our gross profit as a percentage of sales increased by 1.5% compared to the prior year. This increase was primarily attributable to the improvement in Newborn Care gross profit, which was

lower in the prior year

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due to sales to the government of Venezuela which carry a lower gross margin. We also experienced an increase on gross profit on our Neurosurgery products where we experienced higher sales in the U.S. which carry higher margins.

Operating Costs

	Years ended December 31,			
	2018		2017	
Marketing and selling	\$ 136,680		\$ 126,166	
Percentage of revenue	25.7	%	25.2	%
Research and development	\$ 61,482		\$ 51,822	
Percentage of revenue	11.6	%	10.3	%
General and administrative	\$ 70,599		\$ 74,424	
Percentage of revenue	13.3	%	14.9	%
Intangibles amortization	\$ 22,585		\$ 19,171	
Percentage of revenue	4.3	%	3.8	%
Restructuring	\$ 37,231		\$ 914	
Percentage of revenue	7.0	%	0.2	%

Marketing and Selling

Marketing and selling expenses as a percentage of revenue remained relatively flat in 2018 as compared to 2017. The increase in expense in 2018 are for incremental costs of payroll, commissions, and travel associated with higher revenue.

Research and Development

Research and development expenses increased during the year ended December 31, 2018 compared to the prior year. The increase relates to increased spend on new product development, including Otoscan® and RetCam products, and the addition of Neurosurgery products. These increases were partially offset by a reduction in spend related to remediation activities within our Newborn Care business.

General and Administrative

General and administrative expenses decreased during the year ended December 31, 2018 compared to the prior year. This decrease was due to a reduction in bad debt expense related to our GND and Peloton businesses.

Intangibles Amortization

Intangibles amortization increased in 2018 compared to 2017. The increase is related to the impairment charge incurred in 2018 in relation to an end of life decision on our Bio-logic core technology of \$5.6 million. This impairment charge was partially offset by purchase accounting adjustments in 2017 related to our Integra and RetCam acquisitions which did not recur in 2018.

Restructuring

Restructuring costs increased during the year ended December 31, 2018 compared to the prior year. This increase included costs associated with the Company's executive management transition, which were approximately \$10.0 million and were primarily comprised of accelerated vesting of stock compensation and severance expense. In 2018 we experienced impairment charges associated with exiting two of our non-core businesses, GND and Neurocom, which were categorized as restructuring expenses. We recorded a \$14.8 million goodwill impairment charge related to GND. Impairment charges were also recorded for intangible and fixed assets related to GND and Neurocom, which totaled \$2.8 million. Restructuring expenses were also incurred in 2018 in relation to the announcement of our new organizational structure, "One Natus."

Other Income (Expense), net

Other income (expense), net consists of interest income, interest expense, net currency exchange gains and losses, and other miscellaneous income and expense. We reported other expense, net of \$7.7 million in 2018, compared to \$3.6 million in 2017. We reported \$0.8 million of foreign currency exchange losses in 2018 versus \$1.0 million of foreign currency gains in 2017. This increase was driven primarily by the changing value of foreign currencies in which we transact. Interest expense was \$6.8 million

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in 2018 compared to \$5.1 million in 2017 related to interest expense payments on our outstanding debt while interest income of \$0.3 million in 2018 was \$0.1 million less than the amount reported for 2017.

Provision for Income Tax

The effective tax rate (“ETR”) for 2018 was 28.9% as compared to 494.0% for 2017. The significantly lower effective rate in 2018 compared with 2017 is primarily due to the impacts of the 2017 Tax Act, including the repatriation tax on accumulated foreign earnings and re-measurement of net deferred tax assets recorded in the prior year, a reduction in withholding taxes from distribution of income, and reduction in the U.S. Federal corporate rate from 35% to 21%.

Comparison of 2017 and 2016

Revenue

	Years ended December 31,		
	2017	2016	Change
Neuro			
Devices and Systems	\$ 171,315	\$ 168,200	2 %
Supplies	59,955	58,681	2 %
Services	11,886	11,641	2 %
Total Neuro Revenue	243,156	238,522	2 %
Newborn Care			
Devices and Systems	77,573	72,562	7 %
Supplies	43,732	47,674	(8)%
Services	22,325	23,134	(3)%
Total Newborn Care Revenue	143,630	143,370	— %
Otometrics			
Devices and Systems	107,769	—	— %
Supplies	6,415	—	— %
Services	—	—	— %
Total Otometrics Revenue	114,184	—	— %
Total Revenue	\$ 500,970	\$ 381,892	31 %

For the year ended December 31, 2017, Neuro revenue increased by 2% compared to the prior year with the growth in our international markets partly offset by a decline in our domestic market. Devices and Systems revenue increased by 2% for the year ended December 31, 2017 compared to the prior year due mainly to the addition of acquired Neurosurgery products partly offset by declines in core Neuro products. Supplies revenue for 2017 increased 2%.

Services revenue increased by 2% compared to the prior year due mainly to growth in existing markets for GND.

For the year ended December 31, 2017, Newborn Care revenue remained flat compared to the prior year. Devices and Systems revenue increased by 7% due primarily from revenue generated from our RetCam acquisition in July 2016 and sales to the Venezuela Ministry of Health in the first quarter of 2017. Supplies revenue decreased 8% compared to the prior year on lower demand due to lower birth rates and supplies customers converting to our Peloton screening service. Services revenue decreased by 3% compared to the prior year due primarily to the completion of services performed for the Venezuela Ministry of Health in 2016 and the completion of certain contracted services in our Neometrics Data Management business.

For the year ended December 31, 2017, all Otometrics revenue was incremental as we acquired this business on January 3, 2017.

No single customer accounted for more than 10% of our revenue in either 2017 or 2016. Revenue from domestic sales increased 8% to \$270.9 million in 2017, from \$250.7 million in 2016 due to the acquisition of Otometrics and growth in our Newborn care business. Revenue from international sales increased 75% in 2017 to \$230.1 million from \$131.2 million in 2016 primarily due to the 2017 acquisition of Otometrics. Revenue from domestic sales was 54% of total revenue in 2017 compared to 66% of total revenue in 2016, and revenue from international sales was 46% of total revenue in 2017 compared to 34% of total revenue in 2016.

Cost of Revenue and Gross Profit

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	Years ended	
	December 31,	
	2017	2016
Revenue	\$500,970	\$381,892
Cost of revenue	213,376	144,632
Intangibles amortization	6,380	2,327
Gross profit	281,214	234,933
Gross profit percentage	56.1	% 61.5

For the year ended December 31, 2017, our gross profit as a percentage of sales decreased by 5.4% compared to the prior year. This decrease in gross profit was driven by the acquisition of Otometrics whose products have lower margins than our Neuro and Newborn Care products, higher warranty reserve for our neoBLUE phototherapy system recall, and unfavorable geographic mix as we sold more product through our international distributor channels which yield low gross margin than our direct sales.

Operating Costs

	Years ended December 31,			
	2017		2016	
Marketing and selling	\$ 126,166	\$ 84,834		
Percentage of revenue	25.2	% 22.2	%	%
Research and development	\$ 51,822	\$ 33,443		
Percentage of revenue	10.3	% 8.8	%	%
General and administrative	\$ 74,424	\$ 50,877		
Percentage of revenue	14.9	% 13.3	%	%
Intangibles Amortization	\$ 19,171	\$ 8,983		
Percentage of revenue	3.8	% 2.4	%	%
Restructuring	\$ 914	\$ 1,536		
Percentage of revenue	0.2	% 0.4	%	%

Marketing and Selling

Marketing and selling expenses increased in 2017 compared to 2016. This is primarily driven by our acquisition of Otometrics.

Research and Development

Research and development expenses increased during the year ended December 31, 2017 compared to the prior year. This is primarily driven by activities related primarily to the remediation of certain deficiencies identified by the FDA in our Newborn Care business as well as the Otometrics acquisition.

General and Administrative

General and administrative expenses increased during the year ended December 31, 2017 compared to the prior year. The increase is related primarily to the Otometrics acquisition.

Intangibles Amortization

Intangibles amortization increased in 2017 compared to 2016. The increase is mainly driven by additional intangible amortization from the acquisition of Otometrics and, to a lesser extent, the Integra Asset Acquisition as well as the 2016 NeuroQuest and RetCam acquisitions.

Restructuring

Restructuring costs decreased during the year ended December 31, 2017 compared to the prior year. In the prior year we experienced higher expenses related to facilities consolidation and severance expense to reduce redundant costs as well as restructuring charges related mostly to the abandonment of two facilities.

Other Income (Expense), net

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Other income (expense), net consists of interest income, interest expense, net currency exchange gains and losses, and other miscellaneous income and expense. We reported other expense, net of \$3.6 million in 2017, compared to \$0.4 million in 2016. We reported \$1.0 million of foreign currency exchange gains in 2017 versus \$0.3 million of foreign currency losses in 2016. This increase was driven primarily by the changing value of foreign currencies in which we transact. Interest expense was \$5.1 million in 2017 compared to \$0.4 million in 2016 due to interest expense payments on our \$155.0 million debt outstanding while interest income of \$0.4 million in 2017 was \$0.3 million more than the amount reported for 2016.

Provision for Income Tax

The effective tax rate (“ETR”) for 2017 was 494.0% as compared to 22.4% for 2016. The significantly higher effective tax rate in 2017 compared with 2016 is primarily due to the impacts of the 2017 Tax Act, including the repatriation tax on accumulated foreign earnings and re-measurement of net deferred tax assets. Other increases include withholding taxes from distribution of income and additional tax expense related to the settlement of tax audits in foreign jurisdictions, offset by change in geographic mix of income and utilization of certain tax credits in domestic and foreign jurisdictions.

Liquidity and Capital Resources

Liquidity is our ability to generate sufficient cash flows from operating activities to meet our obligations and commitments. In addition, liquidity includes the ability to obtain appropriate financing and to raise capital. Therefore, liquidity cannot be considered separately from capital resources that consist of our current funds and the potential to increase those funds in the future. We plan to use these resources in meeting our commitments and in achieving our business objectives.

We believe that our current cash and cash equivalents and any cash generated from operations will be sufficient to meet our ongoing operating requirements for the foreseeable future.

As of December 31, 2018, we had cash and cash equivalents outside the U.S. in certain of our foreign operations of \$46.8 million. We intend to permanently reinvest this cash held by our foreign subsidiaries except for Excel-Tech and Natus Ireland subsidiaries, which we intend to repatriate. If, however, a portion of these permanently reinvested funds were needed and distributed to our operations in the United States, we may be subject to additional U.S. income taxes and foreign withholding taxes depending on facts and circumstances at the time of distribution. The amount of taxes due would depend on the amount and manner of repatriation, as well as the location from where the funds were repatriated.

On September 23, 2016, we entered into a Credit Agreement with JP Morgan Chase Bank (“JP Morgan”) and Citibank, NA (“Citibank”). The Credit Agreement provides for an aggregate \$150.0 million of secured revolving credit facility (the “Credit Facility”). On September 15, 2017, we exercised our right to increase the amount available under the facility by \$75.0 million, bringing the aggregate revolving credit facility to \$225.0 million. The Credit Agreement contains covenants, including covenants relating to maintenance of books and records, financial reporting and notification, compliance with laws, maintenance of properties and insurance, and limitations on guaranties, investments, issuance of debt, lease obligations and capital expenditures. The Credit Agreement provides for events of default, including failure to pay any principal or interest when due, failure to perform or observe covenants, bankruptcy or insolvency events and the occurrence of a material adverse effect. The Company has no other significant credit facilities. As of December 31, 2018 we had \$105.0 million outstanding under the Credit Facility.

	December 31, 2018	December 31, 2017	December 31, 2016
Cash, cash equivalents, and investments	\$ 56,373	\$ 88,950	\$ 247,570
Debt	104,474	154,283	140,000
Working capital	152,329	213,491	325,858
	Year Ended		
	December 31, 2018	December 31, 2017	December 31, 2016
Net cash provided by operating activities	\$33,020	\$ 19,726	\$ 72,687

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Net cash used in investing activities	(8,389)	(160,935)	(53,264)
Net cash provided by (used in) financing activities	(49,512)	5,826	118,417
Comparison of 2018, 2017, and 2016			

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During 2018 cash generated from operating activities of \$33.0 million was the result of \$22.9 million of net loss, non-cash adjustments to net loss of \$70.1 million, and net cash outflows of \$14.1 million from changes in operating assets and liabilities. The non-cash adjustments were \$33.9 million of depreciation and amortization expense, \$17.1 million from share-based compensation, a \$14.8 million goodwill impairment charge related to GND, \$8.2 million from intangible impairments, \$6.9 million of accounts receivable reserves, and \$2.2 million of warranty reserves, offset by deferred taxes of \$13.7 million. Cash used in investing activities during the period was \$8.4 million and consisted primarily of cash used to acquire other property and equipment of \$7.9 million. Cash used in financing activities during the year ended December 31, 2018 was \$49.5 million and consisted of repayments of \$50.0 million of our outstanding debt under the Credit Facility, \$5.6 million for repurchases of common stock under our share repurchase program, \$5.2 million for taxes paid related to net share settlement of equity awards, offset by Employee Stock Purchase Program (“ESPP”) purchases of \$11.5 million.

During 2017 cash generated from operating activities of \$19.7 million was the result of \$20.3 million of net loss, non-cash adjustments to net loss of \$60.6 million, and net cash outflows of \$20.6 million from changes in operating assets and liabilities. The non-cash adjustments were \$30.1 million of depreciation and amortization expense, \$10.0 million of accounts receivable reserves, \$9.4 million from share-based compensation, \$5.4 million of warranty reserves, \$4.0 of deferred taxes and \$1.7 million from intangible impairments. The change in operating assets and liabilities was driven primarily by an increase in accounts receivable and lower collections during the year compared to the prior year, and a decrease in deferred revenue related to the Venezuelan contract, partially offset by an increase in accrued liabilities for the transition tax under the Act for the deemed repatriation of foreign earnings and decreases in inventories and other assets. Cash used in investing activities during the period was \$161.1 million and consisted primarily of the acquisition of Otometrics for \$143.6 million, net of cash, and the Integra Asset Acquisition for \$46.4 million, offset by sales of short-term investments of \$34.0 million. Cash used to acquire other property and equipment was \$4.1 million. Cash provided by financing activities during the year ended December 31, 2017 was \$5.8 million and consisted of proceeds from borrowings under the Credit Facility of \$60.0 million along with proceeds from stock option exercises and Employee Stock Purchase Program (“ESPP”) purchases of \$3.5 million, offset by \$45.0 million repayment of debt under the Credit Facility, \$7.0 million for taxes paid related to net share settlement of equity awards, \$3.0 million for contingent acquisition consideration, \$2.3 million for repurchases of common stock under our share repurchase program, and \$0.3 million of deferred debt issuance costs.

During 2016 cash generated from operating activities of \$72.7 million was the result of \$42.6 million of net income, non-cash adjustments to net income of \$27.5 million, and net cash outflows of \$2.6 million from changes in operating assets and liabilities. The change in operating assets and liabilities was driven primarily by a decrease in accounts receivable following increased collections efforts, an increase in deferred revenue following receipt of payment from the Ministry of Health of Venezuela, and an increase in prepaid expenses related to prepayments we made to our distribution partner for the Venezuelan contract. Cash used in investing activities during the period was \$53.3 million and consisted primarily of purchases of short-term investments of \$34.0 million, as well as cash used in the acquisitions of RetCam of \$10.6 million and NeuroQuest of \$4.6 million, in each case net of cash acquired. Cash used to acquire other property and equipment and intangible assets was \$3.4 million. Cash provided by financing activities during the year ended December 31, 2016 was \$118.4 million and consisted primarily of outstanding debt under the current Credit Facility of \$140.0 million along with proceeds from stock option exercises and Employee Stock Purchase Program (“ESPP”) purchases and their related tax benefits of \$3.6 million, offset by \$19.3 million for repurchases of common stock under our share repurchase program, \$4.1 million for taxes paid related to net share settlement of equity awards, \$1.3 million for contingent acquisition consideration, and \$0.5 million of deferred debt issuance costs. Under the prior credit facility that was terminated in connection with our entry into the new facility, the Company borrowed and repaid a total of \$16.0 million as of December 31, 2016.

Future Liquidity

Our future liquidity and capital requirements will depend on numerous factors, including the:

- Amount and timing of revenue;
- Extent to which our existing and new products gain market acceptance;
- Extent to which we make acquisitions;

Cost and timing of product development efforts and the success of these development efforts;

- Cost and timing of marketing and selling activities;
and

• Availability of borrowings under line of credit arrangements and the availability of other means of financing.

Contractual Obligations

In the normal course of business, we enter into obligations and commitments that require future contractual payments. The commitments result primarily from purchase orders placed with contract vendors that manufacture some of the components used in our medical devices and related disposable supply products, purchase orders placed for employee benefits and outside services,

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as well as commitments for leased office space, leased equipment, and bank debt. The following table summarizes our contractual obligations and commercial commitments as of December 31, 2018 (in thousands):

	Total	Payments Due by Period			
		Less than 1 Year	1-3 Years	4-5 Years	More than 5 Years
Unconditional purchase obligations	\$66,659	\$64,729	\$1,930	\$ —	\$ —
Operating lease obligations	27,547	8,092	12,241	5,849	1,365
Bank debt	105,000	—	105,000	—	—
Interest payments	8,685	4,721	3,964	—	—
Repatriation tax	6,919	\$308	\$1,259	\$1,810	\$3,542
Total	\$214,810	\$77,850	\$124,394	\$7,659	\$4,907

Purchase obligations are defined as agreements to purchase goods or services that are enforceable and legally binding. Included in the purchase obligations category above are obligations related to purchase orders for inventory purchases under our standard terms and conditions and under negotiated agreements with vendors. We expect to receive consideration (products or services) for these purchase obligations. The purchase obligation amounts do not represent all anticipated purchases in the future, but represent only those items for which we are contractually obligated. The table above does not include obligations under employment agreements for services rendered in the ordinary course of business.

The Company has a Credit Agreement with JP Morgan Chase Bank ("JP Morgan") and Citibank, NA ("Citibank") which matures in 2021. We have recorded this obligation in the payments due in one to three years category in the table above based on the maturity date of the Agreement. As of December 31, 2018 we have classified \$35.0 million out of the \$105.0 million outstanding as short-term on our balance sheet due to our intent to repay this portion over the next twelve months.

We are not able to reasonably estimate the timing of any potential payments for uncertain tax positions under Accounting Standards Codification ("ASC") 740, Accounting for Uncertainty in Income Taxes—an interpretation of FASB Statement 109. As a result, the preceding table excludes any potential future payments related to our ASC 740 liability for uncertain tax positions. See Note 17 of our Consolidated Financial Statements for further discussion on income taxes.

Quantitative and Qualitative Disclosures about Market Risk

We are exposed to various market risks, including changes in foreign currency exchange rates and interest rates that could adversely affect our results of operations and financial condition. We are exposed to interest rate risk on our LIBOR-indexed floating-rate debt. We have entered into an interest rate swap agreement to effectively convert a portion of our floating-rate debt to a fixed-rate. The principal objective of the swap contract is to reduce the variability of future earnings and cash flows associated with our floating-rate debt. We do not hold or issue derivative instruments for trading or other speculative purposes.

Foreign Exchange Rate Risk

We develop products in the U.S, Canada, Europe, and Argentina, and sell those products into more than 100 countries throughout the world. As a result, our financial results could be affected by factors such as changes in foreign currency exchange rates or weak economic conditions in foreign markets. Most of our sales in Europe and Asia are denominated in the U.S. Dollar and Euro and with a portion of our sales denominated in Canadian dollar, Argentine peso and British pound. As our sales in currencies other than the U.S. dollar increase, our exposure to foreign currency fluctuations may increase.

In addition, changes in exchange rates also may affect the end-user prices of our products compared to those of our foreign competitors, who may be selling their products based on local currency pricing. These factors may make our products less competitive in some countries.

If the U.S. Dollar uniformly increased or decreased in strength by 10% relative to the currencies in which our sales were denominated, our net income would have correspondingly increased or decreased by an immaterial amount for the year ended December 31, 2018.

Our interest expense is sensitive to changes in interest rates and may vary with the federal funds rate and London Interbank Offered Rate (LIBOR). We may decrease interest rate risk by keeping our debt leverage low. A hypothetical decrease of 1,000 basis points in market interest rates would not result in a material decrease in interest expense paid on debt held at December 31, 2018.

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All of the potential changes noted above are based on sensitivity analyses performed on our financial position as of December 31, 2018. Actual results may differ as our analysis of the effects of changes in interest rates does not account for, among other things, sales of securities prior to maturity and repurchase of replacement securities, the change in mix or quality of the investments in the portfolio, and changes in the relationship between short-term and long-term interest rates.

Interest Rate Risk

During 2018, we entered into an interest rate swap agreement with a notional amount of \$40.0 million, designated as a cash flow hedge, to hedge the variability of cash flows in interest payments associated with our floating-rate debt.

This interest rate swap agreement matures in September 2021 and converts a portion of our LIBOR floating-Rate debt to fixed-rate debt. The fair value of the interest rate swap agreement is based upon inputs corroborated by observable market data. Changes in the fair value of the interest rate swap agreement are recorded as a component of accumulated other comprehensive income (loss) within stockholders' equity and are amortized to interest expense over the term of the related debt.

As of December 31, 2018, accumulated other comprehensive income (loss) related to the interest rate swap agreement included a net unrealized loss of approximately \$61 thousand, net of tax, which will be recognized in interest expense after the following 12 months, at the then current values on a pre-tax basis. See Note 11 to these Condensed Consolidated Financial Statements for additional discussion on our financial instruments and derivatives.

Interest Rate Risk Sensitivity Analysis

Our remaining indebtedness is at variable rates of interest. Accordingly, changes in interest rates would impact our results of operations in future periods. Based on a sensitivity analysis on actual rates experienced during 2018, a hypothetical increase in interest rates of 50 basis points would have resulted in increased interest expense of \$0.6 million of the year ended December 31, 2018.

Recent Accounting Pronouncements

See Note 1—Organization and Significant Accounting Policies to the Consolidated Financial Statements contained herein for a full description of recent accounting pronouncements including the respective expected dates of adoption and effects on results of our operations and financial condition.

Cautionary Information Regarding Forward Looking Statements

This report contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934 about Natus Medical Incorporated. Forward-looking statements can be identified by the words “expects”, “anticipates”, “believes”, “intends”, “estimates”, “plans”, “will”, “outlook” and similar expressions. Forward-looking statements are based on management's current plans, estimates, assumptions and projections, and speak only as of the date they are made. These forward-looking statements within Item 7 include, without limitation, statements regarding our ability to capitalize on improving market conditions, the sufficiency of our current cash, cash equivalents and short-term investment balances, any cash generated from operations to meet our ongoing operating and capital requirements for the foreseeable future, outcomes of new product development, improved operations performance and profitability as the result of restructuring activities, and our intent to acquire additional technologies, products or businesses.

Forward-looking statements are not guarantees of future performance and are subject to substantial risks and uncertainties that could cause the actual results predicted in the forward-looking statements as well as our future financial condition and results of operations to differ materially from our historical results or currently anticipated results. Investors should carefully review the information contained under the caption “Risk Factors” contained in Item 1A of this report for a description of risks and uncertainties. All forward-looking statements are based on information available to us on the date hereof, and we assume no obligation to update forward-looking statements.

ITEM 7A. Quantitative and Qualitative Disclosures About Market Risk

The information required by this Item is set forth in the section entitled Management’s Discussion and Analysis of Financial Condition and Results of Operations—Quantitative and Qualitative Disclosures About Market Risk, and is incorporated by reference in this section.

ITEM 8. Financial Statements and Supplementary Data

The Consolidated Financial Statements and Supplementary Data required by this Item are set forth where indicated in Item 15 of this report.

Selected Quarterly Financial Data (Unaudited)

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The following table presents our operating results for each of the eight quarters in the period ending December 31, 2018. The information for each of these quarters is unaudited and has been prepared on the same basis as our audited financial statements appearing elsewhere in this report.

In the opinion of our management all necessary adjustments, including normal recurring adjustments, have been included to present fairly the unaudited quarterly results when read in conjunction with our audited Consolidated Financial Statements and the related notes appearing elsewhere in this report. These operating results are not necessarily indicative of the results of any future period.

	Quarters Ended							
	December 31, 2018	September 30, 2018	June 30, 2018	March 31, 2018	December 31, 2017	September 30, 2017	June 30, 2017	March 31, 2017
	(in thousands, except per amounts)							
Revenue	\$140,991	\$130,638	\$130,653	\$128,609	\$131,440	\$122,643	\$122,227	\$124,660
Cost of revenue	58,103	51,583	52,897	55,369	54,762	47,112	54,589	56,913
Intangibles amortization	2,689	1,930	2,717	1,587	2,590	1,290	1,500	1,000
Gross profit	80,199	77,125	75,039	71,653	74,088	74,241	66,138	66,747
Operating expenses:								
Marketing and selling	34,206	33,200	33,401	35,872	31,060	32,537	30,354	32,215
Research and development	15,296	15,127	15,616	15,443	13,724	11,632	13,713	12,753
General and administrative	13,632	15,799	23,721	17,448	16,923	17,329	24,156	16,016
Intangibles amortization	9,151	4,477	4,151	4,806	7,330	3,882	3,885	4,074
Restructuring	23,049	11,432	1,938	812	—	321	307	286
Total operating expenses	95,334	80,035	78,827	74,381	69,037	65,701	72,415	65,344
Income from operations	(15,135)	(2,910)	(3,788)	(2,728)	5,051	8,540	(6,277)	1,403
Other income (expense), net	(2,754)	(726)	(2,398)	(1,821)	(2,300)	150	(378)	(1,039)
Income before provision for income tax	(17,889)	(3,636)	(6,186)	(4,549)	2,751	8,690	(6,655)	364
Provision for income tax	(6,256)	1,940	(3,609)	(1,401)	9,845	17,203	(1,621)	16
Net income (loss)	\$(11,633)	\$(5,576)	\$(2,577)	\$(3,148)	\$(7,094)	\$(8,513)	\$(5,034)	\$348
Earnings per share:								
Basic	\$(0.35)	\$(0.17)	\$(0.08)	\$(0.10)	\$(0.22)	\$(0.26)	\$(0.15)	\$0.01
Diluted	\$(0.35)	\$(0.17)	\$(0.08)	\$(0.10)	\$(0.22)	\$(0.26)	\$(0.15)	\$0.01
Weighted average shares used in the calculation of net earnings per share:								
Basic	33,495	33,321	32,859	32,760	32,648	32,593	32,529	32,485
Diluted	33,495	33,321	32,859	32,760	32,648	32,593	32,529	33,040

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

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Under the rules of the Securities and Exchange Commission, “disclosure controls and procedures” are controls and other procedures that are designed to ensure that information required to be disclosed in the reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by us in our reports that we file or submit under the Securities Exchange Act of 1934 is accumulated and communicated to our management, including our chief executive officer and chief financial officer, as appropriate, to allow timely decisions regarding required disclosure.

Our management, including our chief executive officer and chief financial officer, does not expect that our disclosure controls and procedures or our internal control over financial reporting will prevent all errors and all fraud due to inherent limitations of internal controls. Because of such limitations, there is a risk that material misstatements will not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Our management, with the participation of our chief executive officer and our chief financial officer, has evaluated the effectiveness of our disclosure controls and procedures as of the end of the period covered by this report. Based on that evaluation, our management, including our chief executive officer and chief financial officer, has concluded that our disclosure controls and procedures were effective at a reasonable assurance level as of December 31, 2018.

Management’s Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Exchange Act Rule 13a-15(f). Our management, under the supervision of our chief executive officer and our chief financial officer, assessed the effectiveness of our internal control over financial reporting as of December 31, 2018. In making this assessment, our management used the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on our evaluation under the criteria set forth in the COSO Framework, our management concluded that as of December 31, 2018 our internal control over financial reporting was effective to provide reasonable assurance regarding the reliability of financial reporting.

During the fourth quarter of 2018, in connection with a change in control owner, management identified an existing control that was not designed at a sufficient precision to adequately review the Company’s analysis of separate reporting units. Due to the potential likelihood and magnitude of misstatement, management assessed that this control deficiency could have resulted in a material misstatement. The design of the control was remediated promptly upon identification in the same quarter that it was identified and operated by the control owner which resulted in the Company updating the documentation of its reporting unit analysis. This material weakness did not result in any misstatements to our consolidated financial statements during the fourth quarter or the year ended December 31, 2018, nor does it require a restatement of or change in our consolidated financial statements for any prior annual or interim period. As such, management concluded that the internal controls related to the management’s review of the reporting unit analysis and documentation of separate reporting units were properly designed, applied, and operated effectively for the period ended December 31, 2018.

KPMG LLP, an independent registered public accounting firm, has audited the Consolidated Financial Statements and financial statement schedule included in this Annual Report. They also audited our internal control over financial reporting as of December 31, 2018 as stated in their report included in this Annual Report.

Changes in Internal Control over Financial Reporting

During the year ended December 31, 2018, we implemented internal control procedures to address the previously identified material weakness in our design of control activities related to acquisition accounting. We made substantive changes to redesign our acquisition accounting controls to account for the Integra Asset Acquisition of our Neurosurgery business. Specifically, we improved the design of internal controls related to our review of key assumptions and data used to allocate acquisition purchase price by evaluating the specific financial reporting risks associated with each acquisition as they occur. We improved the design of internal controls related to the evidence and documentation of internal control procedures with respect to the process of determining purchase price allocation. We

also sufficiently distinguished our internal controls from the process we undertake to allocate purchase price. We finalized our purchase accounting for the Integra Asset Acquisition during the third quarter of 2018. After completing our testing of the design and operating effectiveness of these new procedures, we concluded that we have remediated the previously identified material weakness as of December 31, 2018.

In 2017 we completed the acquisitions of Otometrics and Integra. When we acquire new businesses, we incorporate our controls and procedures into the acquired business as part of our integration activities. During the third quarter of 2018, we successfully completed the implementation of Otometrics and Integra on to Natus' global ERP platform. Controls tested as part of our evaluation of internal control over financial reporting during 2018 included Otometrics and Integra. The results of such testing are reflected in our conclusion that internal controls over financial reporting are effective as of December 31, 2018.

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors

Natus Medical Incorporated:

Opinion on Internal Control Over Financial Reporting

We have audited Natus Medical Incorporated and subsidiaries (the “Company”) internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (“PCAOB”), the consolidated balance sheets of the Company as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes and financial statement schedule II: Valuation and Qualifying Accounts (collectively, the “consolidated financial statements”), and our report dated March 1, 2019 expressed an unqualified opinion on those consolidated 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 of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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.

(signed) KPMG LLP
San Francisco, California
March 1, 2019

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PART III

We will provide information that is responsive to this Part III in our Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders (our “2019 Proxy Statement”) or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Part III by reference.

ITEM 10. Directors, Executive Officers, and Corporate Governance

We will provide certain other information that is responsive to this Item 10 in our 2019 Proxy Statement or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Item 10 by reference.

Audit Committee and Audit Committee Financial Expert

The members of the Audit Committee of our Board of Directors are Kenneth E. Ludlum, Robert A. Gunst, and Joshua H. Levine. Our Board of Directors has determined that Kenneth E. Ludlum is an audit committee financial expert as defined in Item 407(d) of Regulation S-K. All of the members of our audit committee are considered “independent” as the term is used in Item 7(d)(3)(iv) of Schedule 14A under the Exchange Act.

Code of Conduct and Ethics

We have a code of conduct and ethics that applies to all of our employees, including our principal executive officer, principal financial officer, and principal accounting officer or controller. This code of conduct and ethics is posted on our internet website. The internet address for our website is www.natus.com, and the code of conduct and ethics may be found in the “Governance” section of our “Investor” webpage.

We intend to satisfy the disclosure requirement under Item 10 of Form 8-K regarding certain amendments to, or waivers from, provisions of this code of conduct and ethics by posting such information on our website, at the address and location specified above, or as otherwise required by The NASDAQ Stock Market.

ITEM 11. Executive Compensation

We will provide information that is responsive to this Item 11 in our 2019 Proxy Statement or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Item 11 by reference.

ITEM 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters
Equity Compensation Plan Information

The following table sets forth information about the number of shares of common stock that can be issued under our 2011 Stock Awards Plan, as amended, and our 2011 Employee Stock Purchase Plan as of December 31, 2018.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants, Awards and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants, Awards and Rights	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (excluding securities reflected in the first column)
Equity compensation plans approved by security holders	314,191	\$ 24.50	457,088
Equity compensation plans not approved by security holders	—	—	—
Total	314,191	24.50	457,088

We will provide certain other information that is responsive to this Item 12 in our 2019 Proxy Statement or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Item 12 by reference.

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

We will provide information that is responsive to this Item 13 in our 2019 Proxy Statement or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Item 13 by reference.

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ITEM 14. Principal Accounting Fees and Services

We will provide information that is responsive to this Item 14 in our 2019 Proxy Statement or in an amendment to this Annual Report not later than 120 days after the end of the fiscal year covered by this Annual Report. That information is incorporated into this Item 14 by reference.

PART IV

ITEM 15. Exhibits, Financial Statement Schedules

(a)(2) Financial Statement Schedule

SCHEDULE II: VALUATION AND QUALIFYING ACCOUNTS

For the years ended December 31, 2018, 2017 and 2016

(In thousands)

	Balance at Beginning of Period	Additions Charged to Expense	Deductions	Balance at End of Period
Year ended December 31, 2018				
Allowance for doubtful accounts	\$ 8,978	\$ 6,423	\$ (8,441)	\$ 6,960
Valuation allowance	5,862	—	(5,225)	637
Year ended December 31, 2017				
Allowance for doubtful accounts	\$ 4,182	\$ 10,017	\$ (5,221)	\$ 8,978
Valuation allowance	3,706	2,156	—	5,862
Year ended December 31, 2016				
Allowance for doubtful accounts	\$ 4,686	\$ 1,123	\$ (1,627)	\$ 4,182
Valuation allowance	3,972	—	(266)	3,706

(a)(3) Exhibits

The Exhibits listed in the Index to Exhibits, which appears immediately following the signature page and is incorporated herein by reference, are filed as part of this 10-K.

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Exhibit No.	Exhibit	Incorporated By Reference			
		Filing	Exhibit No.	File No.	File Date
3.1	Natus Medical Incorporated Amended and Restated Certificate of Incorporation	S-1	3.1.1	333-44138	8/18/2000
3.2	Certificate of Amendment of the Amended and Restated Certificate of Incorporation	8-K	3.1	000-33001	9/13/2012
3.3	Natus Medical Incorporated Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock	8-A	3.1.2	000-33001	9/6/2002
3.4	Amended and Restated Bylaws of Natus Medical Incorporated	8-K	3.1	000-33001	12/7/2018
10.1	Form of Indemnification Agreement between Natus Medical Incorporated and each of its directors and officers	S-1	10.1	333-44138	8/18/2000
10.1.1	2018 Equity Incentive Plan	8-K	10.1	000-33001	12/18/2018
10.1.2	Form of Stock Option Awards Agreement under the 2018 Equity Incentive Plan	8-K	10.1.1	000-33001	12/18/2018
10.1.3	Form of Restricted Stock Award Agreement under the 2018 Equity Incentive Plan	8-K	10.1.2	000-33001	12/18/2018
10.1.4	Form of Restricted Stock Unit Agreement under the 2018 Equity Incentive Plan	8-K	10.1.3	000-33001	12/18/2018
10.1.5	Form of Performance Stock Unit Agreement under the 2018 Equity Incentive Plan	8-K	10.1.4	000-33001	12/18/2018
10.2*	Natus Medical Incorporated Amended and Restated 2000 Stock Awards Plan	8-K	10.1	000-33001	1/4/2006
10.2.1*	Form of Option Agreement under the Amended and Restated 2000 Stock Awards Plan	S-1	10.3.1	333-44138	8/18/2000
10.2.2*	Form of Restricted Stock Purchase Agreement under the Amended and Restated 2000 Stock Awards Plan	10-Q	10.2	000-33001	8/9/2006
10.2.3*	Form of Restricted Stock Unit Agreement under the Amended and Restated 2000 Stock Awards Plan	10-K	10.2.3	000-33001	3/14/2008
10.3*	Natus Medical Incorporated 2000 Director Option Plan	10-Q	10.02	000-33001	5/9/2008
10.3.1*	Form of Option Agreement under the 2000 Director Option Plan	S-1	10.4.1	333-44138	8/18/2000
10.4*	Natus Medical Incorporated 2000 Supplemental Stock Option Plan	S-1	10.15	333-44138	2/9/2001
10.4.1*	Form of Option Agreement for 2000 Supplemental Stock Option Plan	S-1	10.15.1	333-44138	2/9/2001
10.5*	Natus Medical Incorporated 2000 Employee Stock Purchase Plan and form of subscription agreement thereunder	8-K	10.2	000-33001	1/4/2006
10.6*	[Amended] 2011 Stock Awards Plan	14-A	—	000-33001	4/20/2011
10.6.1*	Form of Stock Option Award Agreement under the [Amended] 2011 Stock Plan	10-Q	10.1	000-33001	11/7/2011
10.6.2*	Form of Restricted Stock Award Purchase Agreement	10-Q	10.2	000-33001	11/7/2011
10.6.3*	Form of Restricted Stock Unit Agreement	10-Q	10.3	000-33001	11/7/2011
10.7*	2011 Employee Stock Purchase Plan	14-A	—	000-33001	4/20/2011

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Exhibit No.	Exhibit	Incorporated By Reference		
		Filing	Exhibit No.	File No. File Date
10.7.1*	2011 Employee Stock Purchase Plan Subscription Agreement Form of Employment Agreement between Natus Medical Incorporated and each of its executive officers other than its Chief Executive Officer and Chief Financial Officer	14-A	—	000-33001 4/20/2011
10.8*	Form of Amendment to Employment Agreement between Natus Medical Incorporated and each of its executive officers other than its Chief Executive Officer and Chief Financial Officer	10-K	10.10	000-33001 3/10/2009
10.8.1*	Amended employment agreement between Natus Medical Incorporated and its Chief Executive Officer, James B. Hawkins dated April 19, 2013	10-K		000-33001 3/16/2015
10.9*	Terms of Resignation between Natus Medical Incorporated and James B. Hawkins dated July 11, 2018	8-K	99.1	000-33001 4/22/2013
10.10*	Credit Agreement between Natus Medical Incorporated and CitiBank, NA dated October 9, 2015	10-Q	10.16	000-33001 8/8/2018
10.11	Agreement For the Acquisition of Medical Devices between Medix ICSA and the Ministry of Health of the Republic of Venezuela dated October 15, 2015	8-K	10.1	000-33001 10/9/2015
10.12	Amendment to Agreement For the Acquisition of Medical Devices between Medix ICSA and the Ministry of Health of the Republic of Venezuela dated October 15, 2015	10-Q		000-33001 2/29/2016
10.13	Credit Agreement, dated September 23, 2016, between the Company, JP Morgan Chase Bank, N.A. and Citibank, N.A.	10-Q	10.1	000-33001 11/3/2016
10.14	Master Purchase Agreement, dated September 25, 2016, between GN Hearing A/S, GN Nord A/S and the Company	10-Q	10.3	000-33001 11/3/2016
10.15	Forms of Employment Agreement between Natus Medical Incorporated and Jonathan A. Kennedy dated August 24, 2018	8-K	99.1	000-33001 8/29/2018
10.16*	Form of Employment Agreement between Natus Medical Incorporated and Drew Davies dated October 1, 2018	10-Q	10.18	000-33001 11/8/2018
21.1	Significant Subsidiaries of the Registrant			
23.1	Consent of Independent Registered Public Accounting Firm			
24.1	Power of Attorney (included on signature page)			
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			

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Exhibit No.	Exhibit	Incorporated By Reference		
		Filing	Exhibit No.	File No. File Date
31.2	Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002			
32.1	Certification of Principal Executive Officer and Principal 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 Taxonomy Extension Schema Document			
101.CAL	XBRL Taxonomy Extension Label Calculation Linkbase Document			
101.DEF	XBRL Taxonomy Extension Definition Document			
101.LAB	XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document			
*	Indicates a management contract or compensatory plan or arrangement			

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this Annual Report on Form 10-K to be signed on its behalf by the undersigned thereunto duly authorized.

NATUS MEDICAL INCORPORATED

By /s/ JONATHAN A. KENNEDY
Jonathan A. Kennedy
President and Chief Executive Officer

By /s/ B. DREW DAVIES
B. Drew Davies
Executive Vice President and Chief Financial Officer

Dated: March 1, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below hereby constitutes and appoints Jonathan A. Kennedy and B. Drew Davies and each of them acting individually, as his or her attorney-in-fact, each with full power of substitution, for him or her in any and all capacities, to sign any and all amendments to this Report on Form 10-K, and to file the same, with all exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission.

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed by the following persons on behalf of the registrant and in the capacity and dates indicated:

Signature	Title	Date
/S/ JONATHAN A. KENNEDY (Jonathan A. Kennedy)	President and Chief Executive Officer (Principal Executive Officer)	March 1, 2019
/S/ B. DREW DAVIES (B. Drew Davies)	Executive Vice President & Chief Financial Officer (Principal Financial and Accounting Officer)	March 1, 2019
/S/ BARBARA R. PAUL (Barbara R. Paul)	Chairperson of the Board of Directors	March 1, 2019
/S/ ROBERT A. GUNST (Robert A. Gunst)	Director	March 1, 2019
/S/ LISA W. HEINE (Lisa W. Heine)	Director	March 1, 2019
/S/ JOSHUA H. LEVINE (Joshua H. Levine)	Director	March 1, 2019
/S/ KENNETH E. LUDLUM (Kenneth E. Ludlum)	Director	March 1, 2019

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Stockholders and Board of Directors

Natus Medical Incorporated:

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Natus Medical Incorporated and subsidiaries (the Company) as of December 31, 2018 and 2017, the related consolidated statements of operations and comprehensive income, stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2018, and the related notes and financial statement II: Valuation and Qualifying Accounts (collectively, the consolidated financial statements). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the years in the three-year period ended December 31, 2018, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, 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 March 1, 2019 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated 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 consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

(signed) KPMG LLP

We have served as the Company's auditor since 2014.

San Francisco, California

March 1, 2019

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CONSOLIDATED BALANCE SHEETS

(In thousands, except share amounts)

	December 31,	
	2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$56,373	\$88,950
Accounts receivable, net of allowance for doubtful accounts of \$6,960 and \$8,978	127,041	126,809
Inventories	79,736	71,529
Prepaid expenses and other current assets	22,625	18,340
Total current assets	285,775	305,628
Property and equipment, net	22,913	22,071
Intangible assets, net	139,453	172,582
Goodwill	147,644	172,998
Deferred income tax	22,639	10,709
Other assets	19,716	25,931
Total assets	\$638,140	\$709,919
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$28,805	\$25,242
Current portion of long-term debt	35,000	—
Accrued liabilities	52,568	51,738
Deferred revenue	17,073	15,157
Total current liabilities	133,446	92,137
Long-term liabilities:		
Other liabilities	19,845	21,995
Long-term debt	69,474	154,283
Deferred income tax	16,931	19,407
Total liabilities	239,696	287,822
Commitments and contingencies (Note 20)		
Stockholders' equity:		
Common stock, \$0.001 par value; 120,000,000 shares authorized; shares issued and outstanding 33,804,379 in 2018 and 33,134,101 in 2017	334,215	316,577
Preferred stock, \$0.001 par value; 10,000,000 shares authorized; no shares issued and outstanding in 2018 and in 2017	—	—
Retained earnings	102,261	129,115
Accumulated other comprehensive loss	(38,032)	(23,595)
Total stockholders' equity	398,444	422,097
Total liabilities and stockholders' equity	\$638,140	\$709,919

The accompanying notes are an integral part of these Consolidated Financial Statements.

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NATUS MEDICAL INCORPORATED
CONSOLIDATED STATEMENTS OF OPERATIONS AND COMPREHENSIVE INCOME
(In thousands, except per share amounts)

	Years Ended December 31,		
	2018	2017	2016
Revenue	\$530,891	\$500,970	\$381,892
Cost of revenue	217,952	213,376	144,632
Intangibles amortization	8,924	6,380	2,327
Gross profit	304,015	281,214	234,933
Operating expenses:			
Marketing and selling	136,680	126,166	84,834
Research and development	61,482	51,822	33,443
General and administrative	70,599	74,424	50,877
Intangibles amortization	22,585	19,171	8,983
Restructuring	37,231	914	1,536
Total operating expenses	328,577	272,497	179,673
Income (loss) from operations	(24,562)	8,717	55,260
Other expense, net	(7,698)	(3,567)	(357)
Income (loss) before provision for income tax	(32,260)	5,150	54,903
Provision (benefit) for income tax	(9,325)	25,443	12,309
Net income (loss)	\$(22,935)	\$(20,293)	\$42,594
Net income (loss) per share:			
Basic	\$(0.69)	\$(0.62)	\$1.31
Diluted	\$(0.69)	\$(0.62)	\$1.29
Weighted average shares used in the calculation of net income (loss) per share:			
Basic	33,111	32,564	32,460
Diluted	33,111	32,564	33,056
Other comprehensive income:			
Unrealized losses on available-for-sale investments	\$—	\$(45)	\$(168)
Foreign currency translation adjustment	(14,437)	21,470	(5,003)
Total other comprehensive income	(14,437)	21,425	(5,171)
Comprehensive income (loss)	\$(37,372)	\$1,132	\$37,423

The accompanying notes are an integral part of these Consolidated Financial Statements.

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CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands, except share amounts)

	Common Stock		Retained	Accumulated	Stockholders'
	Shares	Amount	Earnings	Other	Equity
				Comprehensive	
				Loss	
Balances, December 31, 2015	33,153,500	\$323,745	\$106,814	\$ (39,849)	\$ 390,710
Vesting of restricted stock units	20,937	—	—	—	—
Net issuance of restricted stock awards	191,492	—	—	—	—
Employee stock purchase plan	45,515	1,360	—	—	1,360
Stock-based compensation expense	—	9,008	—	—	9,008
Repurchase of company stock	(545,109)	(19,289)	—	—	(19,289)
Taxes paid related to net share settlement of equity awards	(97,231)	(4,107)	—	—	(4,107)
Exercise of stock options	151,142	2,269	—	—	2,269
Other comprehensive loss	—	—	—	(5,171)	(5,171)
Net income	—	—	42,594	—	42,594
Balances, December 31, 2016	32,920,246	\$312,986	\$149,408	\$ (45,020)	\$ 417,374
Vesting of restricted stock units	35,929	—	—	—	—
Net issuance of restricted stock awards	249,366	—	—	—	—
Employee stock purchase plan	48,470	1,581	—	—	1,581
Stock-based compensation expense	—	9,445	—	—	9,445
Repurchase of company stock	(60,800)	(2,268)	—	—	(2,268)
Taxes paid related to net share settlement of equity awards	(193,212)	(7,052)	—	—	(7,052)
Exercise of stock options	134,102	1,885	—	—	1,885
Other comprehensive income	—	—	—	21,425	21,425
Net loss	—	—	(20,293)	—	(20,293)
Balances, December 31, 2017	33,134,101	\$316,577	\$129,115	\$ (23,595)	\$ 422,097
Cumulative-effect adjustment for ASU 2016-16			(3,919)		(3,919)
Vesting of restricted stock units	266	—	—	—	—
Net issuance of restricted stock awards	272,941	—	—	—	—
Employee stock purchase plan	63,649	1,700	—	—	1,700
Stock-based compensation expense	—	17,003	—	—	17,003
Repurchase of company stock	(173,545)	(5,630)	—	—	(5,630)
Taxes paid related to net share settlement of equity awards	(160,700)	(5,183)	—	—	(5,183)
Exercise of stock options	667,667	9,748	—	—	9,748
Other comprehensive loss	—	—	—	(14,437)	(14,437)
Net loss	—	—	(22,935)	—	(22,935)
Balances, December 31, 2018	33,804,379	\$334,215	\$102,261	\$ (38,032)	\$ 398,444

The accompanying notes are an integral part of these Consolidated Financial Statements.

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NATUS MEDICAL INCORPORATED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended December 31,		
	2018	2017	2016
Operating activities:			
Net income (loss)	\$(22,935)	\$(20,293)	\$42,594
Adjustments to reconcile net income to net cash provided by operating activities:			
Provision for losses on accounts receivable	6,909	10,017	1,123
Depreciation and amortization	33,863	30,098	16,879
(Gain) loss on disposal of property and equipment	746	(21)	(29)
Impairment of intangible assets	8,192	1,674	—
Goodwill impairment charge	14,846	—	—
Warranty reserve	2,168	5,370	2,934
Stock-based compensation	17,051	9,445	9,008
Deferred taxes	(13,714)	4,032	(2,437)
Changes in operating assets and liabilities, net of assets and liabilities acquired in acquisitions:			
Accounts receivable	(5,199)	(30,473)	19,723
Inventories	(7,443)	7,581	(7,668)
Other assets	(5,118)	5,492	(11,387)
Accounts payable	4,105	(1,385)	(4,965)
Accrued liabilities	(2,527)	5,421	(6,967)
Deferred revenue	2,076	(7,232)	13,879
Net cash provided by operating activities	33,020	19,726	72,687
Investing activities:			
Acquisition of businesses, net of cash acquired	151	(190,888)	(15,849)
Acquisition of property and equipment	(7,875)	(4,066)	(3,186)
Acquisition of intangible assets	(665)	—	(210)
Purchases of short-term investments	—	—	(34,019)
Sales of short-term investments	—	34,019	—
Net cash used in investing activities	(8,389)	(160,935)	(53,264)
Financing activities:			
Proceeds from stock option exercises and ESPP	11,448	3,466	3,630
Repurchase of company stock	(5,630)	(2,268)	(19,289)
Taxes paid related to net share settlement of equity awards	(5,183)	(7,052)	(4,107)
Proceeds from short-term borrowings	—	—	16,000
Proceeds from long-term borrowings	—	60,000	140,000
Deferred debt issuance costs	—	(354)	(533)
Contingent consideration earn-out	(147)	(2,966)	(1,284)
Payments on borrowings	(50,000)	(45,000)	(16,000)
Net cash provided by (used in) financing activities	(49,512)	5,826	118,417
Exchange rate effect on cash and cash equivalents	(7,696)	10,782	(6,758)
Net increase (decrease) in cash and cash equivalents	(32,577)	(124,601)	131,082
Cash and cash equivalents, beginning of year	88,950	213,551	82,469
Cash and cash equivalents, end of year	\$56,373	\$88,950	\$213,551
Supplemental disclosure of cash flow information:			
Cash paid for interest	\$6,169	\$4,464	\$41
Cash paid for income taxes	\$9,247	\$5,740	\$16,344

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Non-cash investing activities:

Property and equipment included in accounts payable	\$167	\$148	\$134
Inventory transferred to property and equipment	\$1,211	\$1,006	\$1,303

The accompanying notes are an integral part of these Consolidated Financial Statements.

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Years Ended December 31, 2018, 2017 and 2016

1—ORGANIZATION AND SIGNIFICANT ACCOUNTING POLICIES

Organization

Natus Medical Incorporated (“Natus”, the “Company”) was incorporated in California in May 1987 and reincorporated in Delaware in August 2000. Natus is a leading provider of neurology, newborn care, and hearing and balance assessment healthcare products and services used for the screening, diagnosis, detection, treatment, monitoring and tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction, epilepsy, sleep disorders, neuromuscular diseases and balance and mobility disorders. Product offerings include computerized neurodiagnostic systems for audiology, neurology, polysomnography, and neonatology, as well as newborn care products such as hearing screening systems, phototherapy devices for the treatment of newborn jaundice, head-cooling products for the treatment of brain injury in newborns, incubators to control the newborn’s environment, software systems for managing and tracking disorders and diseases for public health laboratories, computer-based audiological, otoneurologic and vestibular instrumentation and sound rooms for hearing and balance care professionals.

Basis of Presentation and Principles of Consolidation

The accompanying Consolidated Financial Statements include the accounts of the Company and its wholly-owned subsidiaries. All intercompany accounts and transactions have been eliminated in consolidation. Certain reclassifications to the prior periods have been made to conform to the current period presentation.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities in the Consolidated Financial Statements and the reported amount of revenue and expenses during the reporting period. Such estimates include allowances for potentially uncollectible accounts receivable, valuation of inventory, intangible assets, goodwill, share-based compensation, deferred income taxes, reserves for warranty obligations, and the provision for income taxes. Actual results could differ from those estimates.

Revenue recognition

Revenue is recognized when obligations under the terms of a contract with a customer are satisfied; generally this occurs with the transfer of control of devices, supplies, or services. Revenue is measured as the amount of consideration the Company expects to receive in exchange for transferring goods or providing services.

For the majority of devices and supplies, the Company transfers control and recognizes revenue when products ship from the warehouse to the customer. The Company generally does not provide rights of return on devices and supplies. Freight charges billed to customers are included in revenue and freight-related expenses are charged to cost of revenue.

Depending on the terms of the arrangement, the Company may also defer the recognition of a portion of the consideration received because it has to satisfy a future obligation (e.g. installation). Judgment is required to determine the standalone selling price (“SSP”) for each distinct performance obligation. The Company’s estimate of SSP is a point estimate. The estimate is calculated annually for each performance obligation that is not sold separately. In instances where SSP is not directly observable, such as when the Company does not sell the product or service separately, the SSP is determined using information that may include market conditions and other observable inputs. The Company sells separately-priced service contracts that extend maintenance coverages for both medical devices and data management systems beyond the base agreements to customers. The separately priced service contracts range from 12 months to 36 months. The Company receives payment at the inception of the contract and recognizes revenue ratably over the service period.

For products containing embedded software, the Company determined the hardware and software components function together to deliver the products’ essential functionality and are considered a combined performance obligation. Revenue recognition policies for sales of these products are substantially the same as for other tangible products.

Inventory

Inventories are carried at the lower of cost or net realizable value, with cost being determined using the first-in, first-out method. The carrying value of the Company's inventories is reduced for any difference between cost and estimated net realizable value of the inventory. We determine net realizable value by evaluating ending inventories for excess quantities, obsolescence, and other factors that could impact our ability to consume inventory for its intended use. Our evaluation of includes an analysis of historical sales by product, projections of future demand by product, and an analysis of obsolescence by product. Adjustments

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

to the value of inventory establish a new cost basis and are considered permanent even if circumstances later suggest that increased carrying amounts are recoverable. If demand is higher than expected, Natus may sell inventory that had previously been written down.

Intangible assets

The Company amortizes intangible assets with finite lives over the estimate of their useful lives. Any future changes that would limit their useful lives or any determination that these assets are carried at amounts greater than their estimated fair value could result in acceleration of amortization over a revised useful life.

The Company reviews intangible assets with finite lives for impairment on an annual basis or whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of the finite-lived intangible assets is assessed based on the estimated undiscounted future cash flows expected to result from the use and eventual disposition of the asset. If the undiscounted future cash flows are less than the carrying amount, the finite-lived intangible assets are considered to be impaired. The amount of the impairment loss, if any, is measured as the difference between the carrying amount of the asset and its fair value. The Company estimates the fair value of finite-lived intangible assets by using an income approach or, when available and appropriate, using a market approach. During the fourth quarter of 2018 the Company recorded impairment charges related to intangible assets of \$8.2 million (See Note 6 - Intangible Assets).

Goodwill

Goodwill is not amortized but is subject to an annual impairment analysis, which is performed as of October 1st; this assessment is also performed whenever there is a change in circumstances that indicates the carrying value of goodwill may be impaired.

Goodwill is tested for impairment at the reporting unit level. As the result of organizational changes at the end of 2018, the Company's evaluation of our GND reporting unit, which is part of our Neuro business unit, was determined to be impaired. Prior to calculating the goodwill impairment loss, we analyzed the recoverability of GND long-lived assets (other than goodwill). As a result, we recorded a goodwill impairment charge of \$14.8 million within restructuring expense on the Company's income statement. There is no remaining goodwill in the GND reporting unit as of December 31, 2018.

In 2018, 2017, and 2016, the Company performed a qualitative assessment to test goodwill for impairment.

Qualitative factors considered in this assessment include industry and market considerations, overall financial performance and other relevant events and factors affecting each reporting unit. Based on the qualitative assessment, the Company determined that the fair value was more likely than not to be greater than its carrying amount, and no further analysis was needed.

If the fair value was less than its carrying amount, the Company would perform a two-step impairment test on goodwill. The first step of the goodwill impairment test, used to identify potential impairment, compares the fair value of a reporting unit to its carrying value, including goodwill. The Company uses a projected discounted cash flow model to determine the fair value of a reporting unit. If the fair value of the reporting unit exceeds its carrying amount, goodwill of the reporting unit is considered not impaired, and the second step of the impairment test is not required. The second step, if required, compares the implied fair value of the reporting unit goodwill with the carrying amount of that goodwill. The fair value of a reporting unit is allocated to all of the assets and liabilities of that unit (including any unrecognized intangible assets) as if the reporting unit had been acquired in a business combination and the fair value of the reporting unit was the price paid to acquire the reporting unit. If the carrying amount of the reporting unit's goodwill exceeds its implied fair value, an impairment charge is recognized in an amount equal to that excess.

Long lived assets

The Company continually monitors events and changes in circumstances that could indicate that carrying amounts of its long-lived assets, including property and equipment and intangible assets, may not be recoverable. When such events or changes in circumstances occur, the Company will assess the recoverability by determining whether the carrying value of an asset group will be recovered through undiscounted expected future cash flows. If the future

undiscounted cash flows are less than the carrying amount of the asset group, the Company will recognize an impairment loss based on the excess of the carrying amount over the fair value of the assets.

Liability for product warranties

The Company provides a warranty for products that is generally one year in length. In some cases, regulations may require the Company to provide repair or remediation beyond the typical warranty period. If any products contain defects, the Company may be required to incur additional repair and remediation costs. Service for domestic customers is provided by Company-owned

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

service centers that perform all service, repair, and calibration services. Service for international customers is provided by a combination of Company-owned facilities and vendors on a contract basis.

The Company accrues estimated product warranty costs at the time of sale based on historical experience. A warranty reserve is included in accrued liabilities for the expected future costs of servicing products. Additions to the reserve are based on management's best estimate of probable liability. The Company considers a combination of factors including material and labor costs, regulatory requirements, and other judgments in determining the amount of the reserve. The reserve is reduced as costs are incurred to honor existing warranty and regulatory obligations.

Share-based compensation

The Company recognizes share-based compensation expense associated with employee stock options under the single-option straight line method over the requisite service period, which is generally a four-year vesting period and ten-year contractual term pursuant to ASC Topic 718, Compensation-Stock Compensation. See Note 15 of the Consolidated Financial Statements.

For employee stock options, the value of each option is estimated on the date of grant using the Black-Scholes option pricing model, which was developed for use in estimating the value of freely traded options. Similar to other option pricing models, the Black-Scholes method requires the input of highly subjective assumptions, including stock price volatility. Changes in the subjective input assumptions can materially affect the estimated fair value of the employee stock options.

The Company recognizes share-based compensation associated with Restricted Stock Awards ("RSA") and Restricted Stock Units ("RSU"). RSAs and RSUs vest ratably over a three-year period for employees. RSAs and RSUs for executives vest over a four-year period; 50% on the second anniversary of the awarded date and 25% on each of the third and fourth anniversaries. RSAs and RSUs for non-employees (Board of Directors) vest over a one-year period; 100% on the first anniversary. The value is estimated based on the market value of Natus common stock on the date of issuance pursuant to ASC Topic 718, Compensation-Stock Compensation.

In 2018, the Company granted performance share unit ("PSU") awards to certain employees. These PSUs fully vest on December 31, 2020. Stock-based compensation for the awards is recognized over the requisite service period beginning on the date of grant through the end of the performance period based on the number of PSUs expected to vest under the awards at the end of the performance period. The expected amount of vesting is determined using certain performance measures. In addition, the PSUs awarded may be subject to downward or upward adjustment depending on the total shareholder return achieved by the Company during the particular performance period related to the PSUs, relative to total shareholder return of our identified peer group. The Company used a third-party service provider to estimate the fair value of the PSUs at grant date by using a Monte Carlo simulation model. This model simulates the stock price movements of the Company and peer group constituents using certain assumptions, including the stock price of the company and peer group constituents.

The Company issues new shares of common stock upon the exercise of stock options and the vesting of RSAs and RSUs.

Forfeitures of employee stock options and awards are estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from initial estimates. Share-based compensation expense is recorded net of estimated forfeitures, such that expense is recorded only for those share-based awards that are expected to vest.

Cash Equivalents and Short-term Investments

All highly liquid investments purchased with an original maturity of three months or less are classified as cash equivalents. Investments with maturities greater than one year are classified as current because management considers all investments to be available for current operations. Cash equivalents and investments are stated at amounts that approximate fair value based on quoted market prices.

The Company's investments have been classified and accounted for as available-for-sale. Such investments are recorded at fair value and unrealized holding gains and losses are reported as a separate component of comprehensive income until realized. Realized gains and losses on sales of investments, if any, are determined on the specific

identification method and are reclassified from accumulated other comprehensive loss to results of operations as other income (expense).

Allowance for Doubtful Accounts

The Company estimates the allowance for potentially uncollectible accounts receivable based on historical collection experience within the markets in which the Company operates and other customer-specific information, such as bankruptcy filings or customer liquidity problems. When all internal efforts have been exhausted to collect the receivable, it is written off and relieved from the reserve.

Fair Value of Financial Instruments

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

Financial instruments include cash and cash equivalents, investments, accounts receivable, and accounts payable. Cash is reported at its fair value on the balance sheet dates. The recorded carrying amounts of investments, accounts receivable and accounts payable approximate the fair values due to the short-term maturities.

Property and Equipment

Property and equipment are stated at cost less accumulated depreciation. Depreciation expense is computed using the straight-line method over estimated useful lives of the respective assets, which are three to ten years for office furniture and equipment, three to five years or the length of the license for computer software and hardware, three to five years for demonstration and loaned equipment, and 30 to 40 years for buildings. Leasehold improvements are amortized over the shorter of the lease term or the estimated useful life. Land is not depreciated. Costs associated with acquiring and installing software to be used for internal purposes are capitalized and amortized on a straight-line basis over three years.

Research & Development Costs

Costs incurred in research and development are charged to operations as incurred.

Income Taxes

The Company accounts for income taxes under the asset and liability method, which requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of events that have been included in the financial statements. Under this method, deferred tax assets and liabilities are determined based on the differences between the financial statements carrying value of assets and liabilities and the tax basis of those assets and liabilities, using enacted tax rates in effect for the year in which the differences are expected to reverse. The effect of a change in tax rates on deferred tax assets and liabilities is recognized in income in the period that includes the enactment date. The Company records net deferred tax assets to the extent it is more likely than not that the assets will be realized. In making such determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax planning strategies and recent financial operations. To the extent that previously reserved deferred tax assets are estimated to be realizable, the Company adjusts the valuation allowance which reduces the provision for income taxes.

The Company recognizes the tax benefit of uncertain tax positions in the financial statements as defined in ASC Topic 740, Income Tax. When the tax position is deemed more likely than not of being sustained, the Company recognizes the largest amount of tax benefit that is greater than 50 percent likely of being ultimately realized upon settlement, as defined in ASC 740-10-05.

On December 22, 2017, the SEC staff issued Staff Accounting Bulletin No. 118 (“SAB 118”), which provides guidance on accounting for the tax effects of the Tax Cuts and Jobs Act (the “Tax Act”). SAB 118 provides a measurement period that should not extend beyond one year from the Tax Act enactment date for companies to complete the accounting under ASC 740, Income Taxes. In accordance with SAB 118, a company must reflect the income tax effects of those aspects of the Tax Act for which the accounting under ASC 740 is complete. The conclusion to the SAB118 period is further discussed in Note 17 - Income Taxes.

Foreign Currency

The functional currency of the Company's subsidiaries outside of North America is generally the local currency of the country where the subsidiary is located. Accordingly, foreign currency translation adjustments relating to the translation of foreign subsidiary financial statements are included as a component of accumulated other comprehensive loss. The Company recorded \$(14.4) million, \$21.5 million, and \$(5.0) million of foreign currency translation gains (losses) for the years ended December 31, 2018, 2017 and 2016, respectively.

Gains and losses from transactions denominated in currencies other than the functional currencies are included in other income and expense. In 2018, 2017, and 2016, net foreign currency transaction gains (losses) were \$(0.8) million, \$1.0 million, and \$(0.4) million, respectively. Foreign currency gains and losses result primarily from fluctuations in the exchange rate between the U.S. dollar, Canadian dollar, Euro, British pound, and Danish kroner.

Effective July 1, 2018, Argentina's economy is considered to be highly inflationary under U.S. GAAP since it has experienced a rate of general inflation in excess of 100% over the latest three-year period, based upon the cumulative inflation rates published by Center for Audit Quality (CAQ) SEC Regulations Committee and its International Practices Task Force (IPTF). As a result, beginning July 1, 2018, the U.S. dollar is the functional currency for the Company's subsidiary in Argentina, Medix I.C.S.A. ("Medix"). Accordingly, all gains and losses resulting from the translation of the Company's Argentinian operations are required to be recorded directly in the statement of operations. Through June 30, 2018, prior to being designated as highly inflationary, currency translation adjustments of Medix's balance sheet are reflected in shareholders' equity as part of Other Comprehensive

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

Income; however subsequent to July 1, 2018, such adjustments are reflected in earnings. Currency adjustments recorded in earnings for Medix subsequent to July 1, 2018 represented a gain of \$0.9 million.

Comprehensive Income

The Company reports by major components and as a single total the change in net assets during the period from non-owner sources as defined in ASC Topic 220, Comprehensive Income. The consolidated statement of comprehensive income has been included with the consolidated statements of operations. Accumulated other comprehensive income consists of translation gains and losses on foreign subsidiary financial statements as well as unrealized gains and losses on investments.

Basic and Diluted Net Income per Share

Natus computes net income per share as defined in ASC Topic 260, Earnings per Share. Basic net income per share is based upon the weighted average number of common shares outstanding during the period. Diluted net income per share is based upon the weighted average number of common shares outstanding and dilutive common stock equivalents outstanding during the period. Common stock equivalents are options granted and shares of restricted stock issued under the stock awards plans and are calculated under the treasury stock method. Common equivalent shares from unexercised stock options and restricted stock are excluded from the computation when there is a loss as the effect is anti-dilutive, or if the exercise price of such options is greater than the average market price of the stock for the period.

Recent Adopted Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (“FASB”) issued Accounting Standard Update No. 2014-09, Revenue from Contracts with Customers (Topic 606) (“ASU 2014-09”), which supersedes nearly all existing revenue recognition guidance. The standard's core principle is that an entity should recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard creates a five-step model to achieve its core principle: (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's price to the separate performance obligations in the contract; and (v) recognize revenue when (or as) the entity satisfies a performance obligation. In addition, entities must disclose sufficient information to enable users of financial statements to understand the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Qualitative and quantitative disclosures are required about: (i) the entity's contracts with customers; (ii) the significant judgments, and changes in judgments, made in applying the guidance to those contracts; and (iii) any assets recognized from the costs to obtain or fulfill a contract with a customer.

The Company adopted the new revenue standard on January 1, 2018, without any material impact to its accounting policies or its reported results. The Company utilized the modified retrospective method of transition and applied a practical expedient permitting the Company to not disclose the consideration allocated to the remaining performance obligations or an explanation of when the Company expects to recognize revenue for all reporting periods presented before January 1, 2018, the date of initial application.

In October 2016, the FASB issued ASU 2016-16, Income Taxes (Topic 740). This update is to remove the prohibition in ASC 740 against the immediate recognition of the current and deferred income tax effects of intra-entity transfers of assets other than inventory. Under the ASU, the selling entity is required to recognize any current tax expense or benefit upon transfer of the asset. Similarly, the purchasing entity is required to recognize a deferred tax asset or deferred tax liability, as well as the related deferred tax benefit or expense, upon receipt of the asset. The Company adopted this guidance on a modified retrospective basis on January 1, 2018, recognizing a charge to retained earnings of approximately \$3.9 million which reflects the unamortized portion of the deferred tax asset for both the consideration as well as the reserve.

In January 2017, the FASB issued ASU 2017-01, Business Combinations (Topic 805). This update is to clarify the definition of a business with the objective of adding guidance to assist entities with evaluating whether transactions

should be accounted for as acquisition (or disposals) of assets or businesses. The definition of a business affected many areas of accounting including acquisitions, disposals, goodwill, and consolidation. The adoption of this guidance prospectively on January 1, 2018 did not have an impact on the Company's consolidated financial statements.

In May 2017, the FASB issued ASU 2017-09, Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting. This update provides guidance about which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. The adoption of this guidance prospectively on January 1, 2018 did not have an impact on the Company's consolidated financial statements.

In August 2017, the FASB issued ASU 2017-12, Derivatives and Hedging (Topic 815): Targeted Improvements to Accounting for Hedging Activities. This update amends and simplifies existing hedge accounting guidance and allows for more

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

hedging strategies to be eligible for hedge accounting. In addition, the ASU amends disclosure requirements and how hedge effectiveness is assessed. Effective January 1, 2018, the Company elected to early adopt ASU 2017-12. The adoption of this standard did not have an impact on the Company's consolidated financial statements.

In June 2018, the FASB issued ASU 2018-07, Compensation - Stock Compensation (Topic 718): Improvements to Non-employee Share-Based Payment Accounting. This update simplifies the accounting for share-based payments made to non-employees so the accounting for such payments is substantially the same as those made to employees. Under this ASU, share based awards to non-employees will be measured at fair value on the grant date of the awards. Entities will need to assess the probability of satisfying performance conditions if any are present, and awards will continue to be classified according to ASC 718 upon vesting. This eliminates the need to reassess classification upon vesting, consistent with awards granted to employees. This ASU is effective for fiscal years beginning after December 15, 2018, including interim periods within those fiscal years, and early adoption is permitted. The Company elected to early adopt ASU 2018-07 effective July 1, 2018 and the adoption of this standard did not have an impact on the Company's consolidated financial statements.

Recent Issued Accounting Pronouncements

In February 2016, the FASB issued ASU 2016-02, Leases (Topic 842). This standard requires lease assets and lease liabilities arising from operating leases to be presented in the statement of financial position. Qualitative along with specific quantitative disclosures are required by lessees and lessors to meet the objective of enabling users of financial statements to assess the amount, timing, and uncertainty of cash flows arising from leases. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018 including interim periods within those fiscal years. In July 2018, FASB issued ASU 2018-10, Codification Improvements to Topic 842, Leases, which affects narrow aspects of the guidance issued in the amendments in Update 2016-02. In July 2018, the FASB also issued ASU 2018-11, Targeted Improvements. The amendments in ASU 2018-11 provide additional clarification and implementation guidance on certain aspects of the previously issued ASU 2016-02 and have the same effective and transition requirements as ASU 2016-02.

The new standard provides a number of optional practical expedients in transition. We expect to elect the 'package of practical expedients,' which permits us not to reassess under the new standard our prior conclusions about lease identification, lease classification and initial direct costs. We have not elected the use-of-hindsight practical expedient or the practical expedient pertaining to land easements; the latter not being applicable to us. We will make an accounting policy election to keep leases with an initial term of 12 months or less off of the balance sheet. We will recognize those lease payments in the Consolidated Statements of Operations on a straight-line basis over the lease term.

The new standard is effective for Natus on January 1, 2019. The Company expects to adopt the new standard using the modified retrospective transition method and use the effective date as our date of initial application. The Company has substantially completed its evaluation of the impact on the Company's lease portfolio. The Company believes the largest impact will be on the consolidated balance sheet for the accounting of facilities-related leases, which represents a majority of its operating leases it has entered into as a lessee. These leases will be recognized under the new standard as ROU assets and operating lease liabilities. As of December 31, 2018, the Company had \$27.5 million of undiscounted future minimum operating lease commitments that are not recognized on its consolidated balance sheets as determined under the current standard. By electing the effective date as our date of initial application, financial information will not be updated and the disclosures required under the new standard will not be provided for periods prior to January 1, 2019.

While substantially complete, the Company is still in the process of finalizing its evaluation of the effect of ASU 2016-02 on the Company's financial statements and disclosures. The Company will finalize its accounting assessment and quantitative impact of the adoption during the first quarter of fiscal year 2019. As the Company completes its evaluation of this new standard, new information may arise that could change the Company's current understanding of the impact to leases. Additionally, the Company will continue to monitor industry activities and any additional

guidance provided by regulators, standards setters, or the accounting profession, and adjust the Company's assessment and implementation plans accordingly. We do not believe the standard will materially affect our consolidated net earnings.

The Company does not believe the new standard will impact on our liquidity. The standard is also not expected to impact our debt-covenant compliance under our current agreements.

In January 2017, the FASB issued ASU 2017-04, Intangibles - Goodwill and Other (Topic 350). This update modifies the concept of impairment from the condition that exists when the carrying amount of goodwill exceeds its implied fair value to the condition that exists when the carrying amount of a reporting unit exceeds its fair value. An entity no longer will determine goodwill impairment by calculating the implied fair value of goodwill by assigning the fair value of a reporting unit to all of its assets and liabilities as if that reporting unit had been acquired in a business combination. Because these amendments eliminate Step 2 from the goodwill impairment test, they should reduce the cost and complexity of evaluating goodwill for impairment.

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

ASU 2017-04 is effective for the Company's annual and any interim goodwill impairment tests performed on or after January 1, 2020. The Company does not expect the adoption of ASU 2017-04 to have a material impact on its consolidated financial statements.

In February 2018, the FASB issued ASU 2018-02, Income Statement - Reporting Comprehensive Income (Topic 220). This update permits a company to reclassify its disproportionate income tax effects of the Tax Cuts and Jobs Act of 2017 (the "Tax Act") on items within accumulated other comprehensive income ("AOCI") to retained earnings (termed "stranded tax effects"). Only the stranded tax effects resulting from the 2017 Act are eligible for reclassification. The ASU also requires certain new disclosures, some of which are applicable for all companies. The ASU is effective for the Company on January 1, 2019. The Company is in the process of evaluating the impact of this standard on its consolidated financial statements.

In July 2018, the FASB issued ASU 2018-09, Codification Improvements. This update makes changes to a variety of topics to clarify, correct errors in, or make minor improvements to the Accounting Standard Codification. The majority of the amendments in ASU 2018-09 will be effective for us in annual periods beginning after December 15, 2018. The Company is in the process of evaluating the impact of this standard on its consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13 Fair Value Measurement (Topic 813), Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement. This update amends Topic 820 to add, remove, and clarify disclosure requirements related to fair value measurement disclosure. For calendar year-end entities, the update will be effective for annual periods beginning January 1, 2020, and interim periods within those fiscal years. Early adoption of the amendments is permitted, including adoption in any interim period. As the standard relates only to disclosures, the Company does not expect the adoption to have a material impact on the consolidated financial statements and is still evaluating if it will early adopt.

In October 2018, the FASB issued ASU 2018-16, Derivatives and Hedging (Topic 815): Inclusion of the Secured Overnight Financing Rate ("SOFR") Overnight Index Swap ("OIS") Rate as a Benchmark Interest Rate for Hedge Accounting Purposes. The amendments in this update permit use of the OIS rate based on the SOFR as a U.S. benchmark interest rate for hedge accounting purposes. For entities that have already adopted ASU 2017-12, the amendments are effective for fiscal years beginning after December 15, 2018, and interim periods within those fiscal years. The amendments should be adopted on a prospective basis for qualifying new or redesigned hedging relationships entered into on or after the date of adoption. The Company does not expect the adoption of ASU 2018-16 to have a material impact on its consolidated financial statements.

2—BUSINESS COMBINATIONS

The assets acquired and liabilities assumed at the date of acquisition are recorded in the Consolidated Financial Statements at the respective fair values as of the acquisition date. The excess of the purchase price over the fair value of the acquired net assets is recorded as goodwill.

The determination of estimated fair value of acquired assets and liabilities requires management to make significant estimates and assumptions. The Company determines the fair value by applying established valuation techniques, based on information that management believes to be relevant to this determination. The Company also utilizes independent third parties to assist in the valuation of goodwill and intangible assets.

The results of operations from acquisitions are included in the Consolidated Financial Statements from the date of the acquisition.

Integra

On October 6, 2017, the Company acquired certain neurosurgery business assets from Integra LifeSciences ("Integra" or "Neurosurgery") for \$46.2 million in cash. As part of the acquisition, the Company acquired a global product line, including the manufacturing facility it leases from a third party and the U.S. rights related to four other product lines. The total purchase price has been allocated to \$13.7 million of tangible assets, \$25.7 million of intangible assets with an associated weighted average life of 9 years being amortized on the straight line method, and \$8.1 million of goodwill, offset by \$1.3 million of net liabilities. Besides pro forma revenue, pro forma financial information for the

Integra acquisition is not presented as certain Integra expense data necessary to present pro forma net income and pro forma earnings per share is not available. Pro forma revenue assuming the acquisition occurred on January 1, 2017 would be \$539.1 million for the year ended December 31, 2017.

Otometrics

On January 3, 2017, the Company acquired the Otometrics business from GN Store Nord A/S for a cash purchase price of \$149.2 million, which includes a \$4.2 million net working capital adjustment. Otometrics is a manufacturer of hearing diagnostics and balance assessment equipment, disposables and software. Otometrics provides computer-based audiological, otoneurologic

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

and vestibular instrumentation and sound rooms to hearing and balance care professionals worldwide. Otometrics has a complete product and brand portfolio known for its sophisticated design technology in the hearing and balance assessment markets.

The following table summarizes the purchase price allocation of the fair value of the assets acquired and liabilities assumed at the date of acquisition, (in thousands):

Cash and cash equivalents	\$5,604	
Accounts receivable	26,851	
Inventories	22,182	
Property and equipment	2,256	
Intangible assets	90,913	
Goodwill	39,355	
Other assets	1,748	
Accounts payable	(7,655)
Accrued liabilities	(16,069)
Deferred revenue	(745)
Deferred income tax	(15,193)
Total purchase price	\$149,247	

The goodwill recorded represents the future economic benefits arising from the other assets acquired that could not be individually identified and separately recognized. The goodwill recorded as part of the acquisition of Otometrics is not amortized and includes the following:

- The expected synergies and other benefits that the Company believes will result from combining the operations of Otometrics with the operations of Natus;

- Any intangible assets that did not qualify for separate recognition, as well as future, yet unidentified projects and products; and

- The value of the going-concern element of Otometrics's existing businesses (the higher rate of return on the assembled collection of net assets versus if Natus has acquired all of the net assets separately).

Management worked with an independent valuation firm to determine fair values of the identifiable intangible assets.

The Company used a combination of income approaches including relief from royalty and multi-period excess earnings methods. The valuation models were based on estimates of future operating projections of the acquired business and rights to sell products as well as judgments on the discount rates used and other variables. The Company determined the forecasts based on a number of factors, included their best estimate of near-term net sales expectations and long-term projections, which included review of internal and independent market analyses.

Otometrics' revenue of \$114.2 million and loss from operations of \$1.0 million are included in the condensed consolidated statement of operations for the period from January 3, 2017 (acquisition date) to December 31, 2017.

The unaudited pro forma financial results presented below for the twelve months ended December 31, 2017 and December 31, 2016, include the effects of pro forma adjustments as if the acquisition occurred on January 1, 2016.

The pro forma results were prepared using the acquisition method of accounting and combine the historical results of Natus and Otometrics for the twelve months ended December 31, 2017 and December 31, 2016, including the effects of the business combination, primarily amortization expense related to the fair value of identifiable intangible assets acquired, interest expense associated with the financing obtained by Natus in connection with the acquisition, and the elimination of acquisition-related costs incurred.

The pro forma financial information is presented for informational purposes only and is not necessarily indicative of the results of operations that would have been achieved if the acquisition had taken place at the beginning of the earliest period presented, nor is it intended to be a projection of future results.

Unaudited Pro forma Financial Information

(in thousands)

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Years Ended December 31, 2018, 2017 and 2016

	Year Ended December 31,			
	2017		2016	
Revenue	\$	500,970	\$	491,994
Net income (loss)	\$	(15,965)	\$	17,385
Earnings (loss) per share:				
Basic	\$	(0.49)	\$	0.54
Diluted	\$	(0.49)	\$	0.53
Weighted average shares used in the calculation of earnings per share:				
Basic		32,564		32,460
Diluted		32,564		33,056

The pro forma results for the year ended December 31, 2017 were adjusted to exclude \$4.3 million of nonrecurring expense related to the fair value adjustment of acquisition-date inventory.

The pro forma results for the year ended December 31, 2016 were adjusted to include \$3.0 million of amortization of intangible assets, and \$4.6 million of interest expense.

RetCam

On July 6, 2016, the Company acquired the portfolio of RetCam Imaging Systems (“RetCam”) from Clarity Medical Systems, Inc. for \$10.6 million in cash. RetCam is an imaging system used to diagnose and monitor a range of ophthalmic maladies in premature infants. The purchase agreement also included a holdback of \$2.0 million which was paid on February 16, 2017. Subsequent to the acquisition, an additional \$1.1 million was paid by the Company to Clarity Medical Systems as a result of a working capital adjustment. Results of operations for RetCam are included in the consolidated financial statements from the date of acquisition. The total purchase price was allocated \$7.2 million to tangible assets, \$4.9 million to intangible assets with an assigned weighted average life of 5 years being amortized on the straight line method, and \$1.7 million to goodwill, offset by \$2.0 million to net liabilities. Pro forma financial information for the RetCam acquisition is not presented as it is not considered material.

NeuroQuest

On March 2, 2016, the Company acquired NeuroQuest, LLC (“NeuroQuest”) through an asset purchase. NeuroQuest complements the Monarch Medical Diagnostics, LLC (“Monarch”) acquisition, which offer patients a convenient way to complete routine-electroencephalography and extended video electronencephalography (“VEEG”) testing. The cash consideration for NeuroQuest was \$4.6 million. The purchase agreement included a consideration holdback of \$0.5 million which was paid on April 30, 2017. The total purchase price was allocated to \$0.5 million of tangible assets, \$1.3 million of intangible assets with an assigned weighted average life of 5 years being amortized on the straight line method, and \$3.5 million of goodwill, offset by \$0.1 million of net liabilities. Pro forma financial information for the NeuroQuest acquisition is not presented as it is not considered material.

3—REVENUE

Contract assets for the periods presented primarily represent the difference between revenue recognized based on the relative selling price of the related performance obligations and the contractual billing terms in the arrangements. Deferred revenue for the periods presented was primarily related to extended service contracts, installation, and training, for which the service fees are billed up-front. The associated deferred revenue is generally recognized ratably over the extended service period or when installation and training are complete.

The following table summarized the changes in the contract assets and contract liability balances for the year ended December 31, 2018 (in thousands):

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

Unbilled AR, December 31, 2017	\$2,884
Additions	680
Transferred to Trade Receivable	(552)
Unbilled AR, December 31, 2018	\$3,012
Deferred Revenue, December 31, 2017	\$18,901
Additions	16,096
Revenue Recognized	(13,587)
Deferred Revenue, December 31, 2018	\$21,410

At December 31, 2018, the short-term portion of the contract liability of \$17.1 million and the long-term portion of \$4.3 million were included in deferred revenue and other long term liabilities respectively, in the consolidated balance sheet. As of December 31, 2018, the Company expects to recognize revenue associated with deferred revenue of approximately \$17.1 million in 2019, \$2.2 million in 2020, \$1.0 million in 2021, \$0.7 million in 2022, and \$0.4 million thereafter.

4—INVENTORIES

Inventories consist of (in thousands):

	December 31,	
	2018	2017
Raw materials and subassemblies	\$31,459	\$44,699
Work in process	2,424	3,788
Finished goods	63,932	43,488
Total Inventories	97,815	91,975
Less: Non-current Inventories	(18,079)	(20,446)
Inventories	\$79,736	\$71,529

Non-current inventory consists of service components used to repair products held by customers pursuant to warranty obligations and extended service contracts, including service components for products that the Company no longer sells, inventory purchased for lifetime buys, and inventory that is turning at a slow rate. The Company believes that these inventories will be utilized for the intended purpose.

At December 31, 2018 and 2017, the Company has classified \$18.1 million and \$20.4 million, respectively, of inventories as non-current. The \$2.3 million reduction in non-current inventories during the period is due to reserves placed on products which the Company has decided to discontinue offering as part of its restructuring efforts.

5—PROPERTY AND EQUIPMENT

Property and equipment consist of (in thousands):

	December 31,	
	2018	2017
Land	\$1,828	\$2,815
Buildings	7,036	5,096
Leasehold improvements	4,649	3,295
Office furniture and equipment	23,487	25,612
Computer software and hardware	12,803	9,760
Demonstration and loaned equipment	12,843	11,932
	62,646	58,510
Accumulated depreciation	(39,733)	(36,439)
Total	\$22,913	\$22,071

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

Depreciation expense of property and equipment was \$6.0 million, \$4.1 million, and \$3.7 million in the years ending December 31, 2018, 2017 and 2016, respectively.

6—INTANGIBLE ASSETS

The following table summarizes the components of gross and net intangible asset balances (in thousands):

	December 31, 2018				December 31, 2017			
	Gross Carrying Amount	Accumulated Impairment	Accumulated Amortization	Net Book Value	Gross Carrying Amount	Accumulated Impairment	Accumulated Amortization	Net Book Value
Technology	\$ 111,198	(6,768)	\$ (50,046)	\$ 54,384	\$ 101,045	(1,058)	\$ (42,048)	\$ 57,939
Customer related	99,440	(1,961)	(38,574)	58,905	108,074	(50)	(28,972)	79,052
Trade names	47,217	(4,397)	(19,250)	23,570	49,313	(3,916)	(13,273)	32,124
Internally developed software	16,264	—	(14,164)	2,100	15,610	—	(12,293)	3,317
Patents	2,718	(133)	(2,524)	61	2,778	(133)	(2,495)	150
Service Agreements	1,190	—	(757)	433	—	—	—	—
Total Definite-lived intangible assets	278,027	(13,259)	(125,315)	139,453	276,820	(5,157)	(99,081)	172,582

Finite lived intangible assets are amortized over their weighted average lives, which are 14 years for technology, 13 years for patents, 10 years for customer-related intangibles, 7 years for trade names, 6 years for internally developed software, 2 years for service agreements, and 11 years weighted average in total.

Internally developed software consists of \$14.1 million relating to costs incurred for development of internal use computer software and \$2.2 million for development of software to be sold.

During the fourth quarter of 2018 the Company recorded impairment charges related to intangible assets of \$8.2 million. These impairments relate to end of life of life decisions for the core technology utilized in our Bio-logic products and our GND and Neurocom product lines. The Company acquired its Bio-logic core technology as part of the acquisition of Bio-logic Systems Corp in 2006 and has maintained the technology since its acquisition. In 2018 Company partnered with one of its contract manufacturers to develop and manufacture the next generation technology to be used in its Bio-logic products. The decision to develop this new technology resulted in an impairment of the originally acquired core technology of \$5.6 million which was recorded within intangibles amortization expense on the Company's income statement.

On January 15, 2019, Natus announced the implementation of a new organizational structure, "One Natus." As a result of this new organizational structure, Natus announced it will exit two of our non-core businesses, GND and Neurocom. The decision to exit these non-core businesses resulted in the impairment of intangible assets of \$2.6 million as of December 31, 2018. These impairments were the result of deterioration of expected future cash flows as compared to the carrying value of the assets. Impairments were determined by performing an undiscounted cash flow analysis on intangibles assets. The impairment charge for GND and Neurocom is recorded on the Company's income statement within restructuring expense.

Amortization expense related to intangible assets with finite lives, including impairment charges described above, was as follows (in thousands):

	Years Ended		
	December 31, 2018	2017	2016
Technology	\$ 14,100	\$ 7,705	\$ 3,407
Customer related	12,244	10,945	3,452
Trade names	6,736	6,479	4,115

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Internally developed software	2,123	2,117	2,069
Patents	84	244	112
Service Agreements	757	—	—
Total amortization	\$36,044	\$27,490	\$13,155

The amortization expense amounts shown above include internally developed software not held for sale of \$1.9 million, \$1.9 million, and \$1.8 million for the years ended 2018, 2017, and 2016, respectively. The amortization expense for internally

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Years Ended December 31, 2018, 2017 and 2016

developed software not held for sale is recorded within the Company's income statement as a general and administrative operating expense.

Expected annual amortization expense related to amortizable intangible assets is as follows (in thousands):

2019	\$23,451
2020	21,889
2021	20,977
2022	17,516
2023	16,537
Thereafter	39,083
Total expected amortization expense	\$139,453

7—GOODWILL

The carrying amount of goodwill and the changes in those balances are as follows (in thousands):

As of December 31, 2016	\$113,112
Acquisitions/Purchase Accounting Adjustments	54,746
Foreign currency translation	5,140
As of December 31, 2017	\$172,998
Purchase Accounting Adjustments	(7,324)
Impairment charge	(14,846)
Foreign currency translation	(3,184)
As of December 31, 2018	\$147,644

8—ACCRUED LIABILITIES

Accrued liabilities consist of (in thousands):

	December 31,	
	2018	2017
Compensation and related benefits	\$24,891	\$22,816
Warranty reserve	9,391	10,995
Accrued federal, state, and local taxes	8,285	8,155
Accrued amounts due to customers	5,507	2,424
Accrued professional fees	1,820	2,280
Accrued selling expenses	246	1,704
Contingent consideration	—	147
Accrued travel	201	338
Deferred rent	205	161
Other	2,022	2,718
Total	\$52,568	\$51,738

9—LONG-TERM OTHER LIABILITIES

Long-term other liabilities consist of (in thousands):

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Years Ended December 31, 2018, 2017 and 2016

	December 31,	
	2018	2017
Long-term taxes payable	\$ 15,425	\$ 17,934
Non-current deferred revenue	4,338	4,039
Other	82	22
Total	\$ 19,845	\$ 21,995

10—DEBT AND CREDIT ARRANGEMENTS

The Company has a Credit Agreement with JP Morgan Chase Bank ("JP Morgan") and Citibank, NA ("Citibank"). The Credit Agreement provides for an aggregate \$150 million of secured revolving credit facility. In the third quarter of 2017, the Company exercised the right to increase the amount available under the facility by \$75.0 million, bringing the aggregate revolving credit facility to \$225.0 million. The Credit Agreement contains covenants relating to maintenance of books and records, financial reporting and notification, compliance with laws, maintenance of properties and insurance, and limitations on guaranties, investments, issuance of debt, lease obligations and capital expenditures, and is secured by virtually all of the Company's assets. The Credit Agreement provides for events of default, including failure to pay any principal or interest when due, failure to perform or observe covenants, bankruptcy or insolvency events and the occurrence of a material adverse effect. The Company has no other significant credit facilities.

In addition to the customary restrictive covenants listed above, the Credit Agreement also contains financial covenants that require the Company to maintain a certain leverage ratio and fixed charge coverage ratio, each as defined in the Credit Agreement:

- Leverage Ratio, as defined, to be no higher than 2.75 to 1.00.
- Interest Coverage Ratio, as defined, to be at least 1.75 to 1.00 at all times.

As of December 31, 2018, the Company was in compliance with the Leverage Ratio and the Interest Coverage Ratio covenants as defined in the Credit Agreement.

As of December 31, 2018, the Company had \$105 million outstanding under the Credit Agreement.

Pursuant to the terms of the Credit Agreement, the outstanding principal balance will bear interest at either (a) a fluctuating rate per annum equal to the Applicable Rate, as defined in the Credit Agreement, depending on the leverage ratio plus the higher of (i) the federal funds rate plus one-half of one percent per annum; (ii) the prime rate in effect on such a day; and (iii) the LIBOR rate plus one percent, or (b) a fluctuating rate per annum of LIBOR Rate plus the Applicable Rate, which ranges between 1.75% to 2.75%. The effective interest rate during the twelve months ended December 31, 2018 was 4.44%. The Credit Agreement matures on September 23, 2021, at which time all principal amounts outstanding under the Credit Agreement will be due and payable.

Long-term debt consists of (in thousands):

	December 31,	
	2018	2017
Revolving credit facility	\$ 105,000	\$ 155,000
Debt issuance costs	(526)	(717)
Less: current portion of long-term debt	35,000	—
Total long-term debt	\$ 69,474	\$ 154,283

Maturities of long-term debt as of December 31, 2018 are as follows (in thousands):

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Years Ended December 31, 2018, 2017 and 2016

	December 31,	
	2018	2017
2019	\$—	\$—
2020	—	—
2021	105,000	154,283
Thereafter—	—	—
Total	\$105,000	\$154,283

As of December 31, 2018, the carrying value of the total debt approximated fair market value.

11—FINANCIAL INSTRUMENTS AND DERIVATIVES

The Company uses interest rate swap derivative instruments to manage earnings and cash flow exposure resulting from changes in interest rates. These interest rate swaps apply a fixed interest rate on a portion of the Company's expected LIBOR-indexed floating-rate borrowings. The Company held the following interest rate swaps as of December 31, 2018 (in thousands):

Hedged Item	Current Notional Amount	Designation Date	Effective Date	Termination Date	Fixed Interest Rate	Floating Rate	Estimated Fair Value
1-month USD LIBOR Loan	\$ 40,000	May 31, 2018	June 1, 2018	September 23, 2021	2.611%	1-month USD LIBOR	\$ 77
Total interest rate derivatives designated as cash flow hedge	\$ 40,000						\$ 77

The Company designated these derivative instruments as cash flow hedges. The Company assesses the effectiveness of these derivative instruments and records the change in the fair value of a derivative instrument designated as a cash flow hedge as unrealized gains or losses in accumulated other comprehensive income (“AOCI”), net of tax. Once the hedged item affects earnings, the effective portion of any gain or loss will be reclassified to earnings. If the hedged cash flow does not occur, or if it becomes probable that it will not occur, the Company will reclassify the amount of any gain or loss on the related cash flow hedge to interest expense at that time.

As of December 31, 2018, the Company expects that approximately \$17 thousand of losses associated with the cash flow hedge, net of tax, could be reclassified from AOCI into earnings within the next twelve months.

12—RESERVE FOR PRODUCT WARRANTIES

The Company provides a warranty for products that is generally one year in length and in some cases, regulations may require them to provide repair or remediation beyond the typical warranty period. If any of the products contain defects, the Company may be required to incur additional repair and remediation costs. Service for domestic customers is provided by Company-owned service centers that perform all service, repair and calibration services. Service for international customers is provided by a combination of Company-owned facilities and vendors on a contract basis.

A warranty reserve is included in accrued liabilities for the expected future costs of servicing products. Additions to the reserve are based on management's best estimate of probable liability. The Company considers a combination of factors including material and labor costs, regulatory requirements, and other judgments in determining the amount of reserve. The reserve is reduced as costs are incurred to honor existing warranty and regulatory obligations.

As of December 31, 2018, the Company has accrued \$4.2 million to bring certain neoBLUE phototherapy products into U.S. regulatory compliance. The Company's estimate of the costs associated with bringing the neoBLUE phototherapy products into compliance is primarily based upon the number of units outstanding that may require the repair and costs associated with shipping and repairing the product.

The details of activity in the warranty reserve are as follows (in thousands):

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Years Ended December 31, 2018, 2017 and 2016

	Balance at Beginning of Period	Assumed Through Acquisitions	Additions Charged to Expense	Utilizations	Changes in Estimates related to Product Remediation Activities	Balance at End of Period
December 31, 2018	\$ 10,995	\$ —	\$ 4,487	\$ (3,772)	\$ (2,319)	\$ 9,391
December 31, 2017	\$ 10,670	\$ 1,159	\$ 5,370	\$ (7,790)	\$ 1,586	\$ 10,995
December 31, 2016	\$ 10,386	\$ 222	\$ 2,711	\$ (2,649)	\$ —	\$ 10,670

The estimates the Company uses in projecting future product warranty costs may prove to be incorrect. Any future determination that product warranty reserves are understated could result in increases to cost of sales and reductions in operating profits and results of operations.

13—STOCKHOLDERS' EQUITY

Common Stock—The Company has 120,000,000 shares of common stock authorized at a par value of \$0.001 per share.

Preferred Stock—The Company has 10,000,000 shares of preferred stock authorized at a par value of \$0.001 per share.

In accordance with the terms of the amended and restated certificate of incorporation, the Board of Directors is authorized to provide for the issuance of one or more series of preferred stock, including increases or decreases to the series. The Board of Directors has the authority to set the rights, preferences, and terms of such shares. As of December 31, 2018, no shares of preferred stock were issued and outstanding.

14—EARNINGS PER SHARE

The components of basic and diluted EPS are as follows (in thousands, except per share amounts):

	December 31,		
	2018	2017	2016
Net income (loss)	\$(22,935)	\$(20,293)	\$42,594
Weighted average common shares	33,111	32,564	32,460
Dilutive effect of stock based awards	—	—	596
Diluted Shares	33,111	32,564	33,056
Basic earnings (loss) per share	\$(0.69)	\$(0.62)	\$1.31
Diluted earnings (loss) per share	\$(0.69)	\$(0.62)	\$1.29
Shares excluded from calculation of diluted EPS	343	565	—

15—SHARE-BASED COMPENSATION

Share-Based Compensation Expense—The Company accounts for share-based compensation in accordance with ASC Topic 718, Compensation—Stock Compensation. Share-based compensation was recognized as follows in the consolidated statement of income (in thousands):

	December 31,		
	2018	2017	2016
Cost of revenue	\$218	\$232	\$219
Marketing and selling	801	540	821
Research and development	1,039	1,332	1,515
General and administrative	14,945	7,341	6,453
Total expense	17,003	9,445	9,008

Stock Awards Plans—Natus' 2011 Stock Awards Plan (the "Plan") provides for the granting of the following:

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Years Ended December 31, 2018, 2017 and 2016

Incentive stock options to employees;
 Non-statutory stock options to employees, directors and consultants;
 Restricted stock awards and restricted stock units;
 Performance share units;
 Stock bonuses; and
 Stock appreciation rights.

As of December 31, 2018, there were 457,088 shares available for future awards under the plan.

Under the Plan, stock options may be issued at not less than the fair market value of the common stock on the date of grant, as determined by the Board of Directors. Options issued under the Plan become exercisable as determined by the Board of Directors and expire no more than six years after the date of grant. Most options vest ratably over four years.

Stock Option Activity—Stock option activity under the stock awards plans for the year ended December 31, 2018 is summarized as follows:

	Number of Shares	Weighted Average Exercise Price
Outstanding, December 31, 2017 (790,573 shares exercisable at a weighted average exercise price of \$15.14 per share)	795,085	\$ 15.18
Granted	74,124	\$ 35.25
Exercised	(667,667)	\$ 14.60
Forfeited	—	\$ —
Expired	—	\$ —
Outstanding, December 31, 2018 (127,453 shares exercisable at a weighted average exercise price of \$18.22 per share)	201,542	\$ 24.48

As of December 31, 2018, unrecognized compensation related to the unvested portion of stock options was approximately \$0.7 million, which is expected to be recognized over a weighted average period of 3.5 years. The intrinsic value of options exercised, representing the difference between the closing stock price of common stock on the date of the exercise and the exercise price, in the years ended December 31, 2018, 2017 and 2016 was \$13.6 million, \$3.1 million, and \$3.4 million, respectively.

As of December 31, 2018, there were: (i) 197,647 options vested and expected to vest with a weighted average exercise price of \$24.27, an intrinsic value of \$2.0 million, and a weighted average remaining contractual term of 2.4 years; and (ii) 127,453 options exercisable with a weighted average exercise price of \$18.22, an intrinsic value of \$2.0 million, and a weighted average remaining contractual term of 0.7 years.

Black-Scholes Inputs—The fair value of option grants was estimated using the Black-Scholes option pricing model with the following weighted average assumptions:

	December 31, 2018	
Weighted-average fair value of options granted	\$ 11.03	
Expected life in years	4.0	
Risk-free interest rate	2.7	%
Expected volatility	35	%
Dividend yield	None	

The Company did not grant any stock options during the years ended December 31, 2017 and December 31, 2016. The expected life of options is based primarily on historical share option exercise experience of the employees for options granted by the Company. All options are treated as a single group in the determination of expected life, as the Company does not currently expect substantially different exercise or post-vesting termination behavior among the

employee population. The risk-free interest rate is based on the U.S. Treasury yield for a term consistent with the expected life of the awards in effect at the time

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

of grant. Expected volatility is based primarily on historical volatility data of the Company's common stock. The Company has no history or expectation of paying dividends on common stock.

Share-based compensation expense associated with options is based on awards ultimately expected to vest. At the time of an option grant, the Company estimates the expected future rate of forfeitures based on historical experience. These estimates are revised, if necessary, in subsequent periods if actual forfeiture rates differ from those estimates. If the actual forfeiture rate is lower than estimated the Company will record additional expense and if the actual forfeiture is higher than estimated the Company will record a recovery of prior expense.

Restricted Stock Awards Activity—The following table summarizes the activity for restricted stock awards during the year ended December 31, 2018:

	Shares	Weighted Average Grant Date Fair Value
Unvested at December 31, 2017	363,808	\$ 37.46
Granted	300,833	\$ 37.22
Vested	(343,161)	\$ 37.67
Forfeited	(27,892)	\$ 34.71
Unvested at December 31, 2018	293,588	\$ 37.04

As of December 31, 2018, unrecognized compensation related to the unvested portion of stock awards was \$6.2 million, which is expected to be recognized over a weighted average period of 2.3 years. The fair market value of outstanding restricted stock awards at December 31, 2018 was \$10.0 million. For the restricted stock awards granted during the years ended December 31, 2018, 2017, 2016, the weighted average grant date fair values were \$37.22, \$34.94, and \$42.22, respectively. The total grant date fair value of restricted stock awards vested during fiscal year 2018, 2017, and 2016 was \$12.9 million, \$12.7 million, and \$4.3 million, respectively. For the restricted stock awards that vested during the years ended December 31, 2018, 2017, and 2016, the total intrinsic value was \$11.2 million, \$14.3 million, and \$9.0 million, respectively.

Restricted Stock Units Activity—The following table summarizes restricted stock units activity for the year ended December 31, 2018:

	Shares	Weighted Average Grant Date Fair Value
Outstanding at December 31, 2017	24,144	\$ 37.17
Awarded	95,411	\$ 36.77
Released	(266)	\$ 37.48
Forfeited	(6,484)	\$ 37.55
Outstanding at December 31, 2018	112,805	\$ 36.80

*Includes the initial amount of PSUs granted, which may be subject to downward or upward adjustment depending on the performance measures during the particular performance period pursuant to the PSU award agreement.

As of December 31, 2018, unrecognized compensation related to the unvested portion of stock units was \$1.3 million, which is expected to be recognized over a weighted average period of 1.6 years. The aggregate intrinsic value of outstanding restricted stock units at December 31, 2018 was \$3.8 million. For the restricted stock units granted during the years December 31, 2018, 2017, 2016, the weighted average grant date fair values were \$36.77, \$35.16, and \$45.23, respectively. The total grant date fair value of restricted stock units vested during fiscal year 2018, 2017, and

2016 was \$10.0 thousand, \$1.2 million, and \$0.5 million, respectively. For the restricted stock units that vested during the years ended December 31, 2018, 2017, and 2016, the total intrinsic value was \$8.7 thousand, \$1.3 million, and \$0.9 million, respectively.

Employee Stock Purchase Plan—Under Natus' 2011 Employee Stock Purchase Plan (the “ESPP”), U.S. employees can elect to have salary withholdings of up to 15% of eligible compensation to a maximum of \$10,625 per offering period, to purchase shares of common stock on April 30 and October 31 of each year. The purchase price for shares acquired under the ESPP is 85%

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

of the fair market value on the last day of the offering period. As of December 31, 2018, there were 53,270 shares reserved for future issuance under the ESPP.

Because the ESPP does not have a “look back” feature, the compensation expense associated with the Plan is not measured by the use of the Black-Scholes pricing model, but rather by measuring the difference between the fair market value of common stock on the last day of the offering period and the purchase price for the offering period, which is 85% of the fair market value. Compensation expense associated with the ESPP for the years ended December 31, 2018, 2017 and 2016, respectively, was \$0.3 million, \$0.3 million, and \$0.2 million.

16—OTHER INCOME (EXPENSE), NET

Other income (expense), net consists of (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Interest income	\$334	\$425	\$315
Interest expense	(6,794)	(5,081)	(430)
Foreign currency gain (loss)	(800)	1,013	(359)
Other	(438)	76	117
Total other expense, net	\$(7,698)	\$(3,567)	\$(357)

17—INCOME TAXES

Income (loss) before provision for income tax is as follows (in thousands):

	Years Ended December 31,		
	2018	2017	2016
U.S.	\$(54,370)	\$(18,059)	\$68
Foreign	22,110	23,209	54,835
Income before provision for income tax	\$(32,260)	\$5,150	\$54,903

The components of income tax expense (benefit) for the years ended December 31, 2018, 2017 and 2016 (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Current			
U.S. Federal	\$(1,872)	\$10,110	\$(1,388)
U.S. State and local	(59)	1,079	692
Non-U.S.	5,732	12,764	15,069
Total current tax expense	3,801	23,953	14,373
Deferred			
U.S. Federal	(8,248)	6,345	(1,534)
U.S. State and local	(1,751)	(1,333)	(378)
Non-U.S.	(3,127)	(3,522)	(152)
Total deferred tax benefit	(13,126)	1,490	(2,064)
Total income tax expense	\$(9,325)	\$25,443	\$12,309

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of deferred tax assets and liabilities as of December 31, 2018 and 2017 are as follows (in thousands):

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

	December 31,	
	2018	2017
Deferred tax assets:		
Net operating loss carryforwards	\$3,192	\$3,958
Credit carryforwards	2,882	4,466
Accruals deductible in different periods	15,197	11,969
Employee benefits	1,262	1,085
Total deferred tax assets	22,533	21,478
Valuation allowance	(637)	(5,862)
Total net deferred tax assets	\$21,896	\$15,616
Deferred tax liabilities:		
Basis difference in fixed and intangible assets	(15,687)	(23,934)
Foreign earnings to be repatriated	(500)	(380)
Total deferred tax liabilities	(16,187)	(24,314)
Total net deferred tax assets	\$5,709	\$(8,698)

The income tax expense (benefit) in the accompanying statements of income differs from the provision calculated by applying the U.S. federal statutory income tax rate of 21%, 35%, and 35% in 2018, 2017, and 2016, respectively to income before taxes due to the following:

	Years Ended December 31,		
	2018	2017	2016
Federal statutory tax expense	\$(6,775)	\$1,802	\$19,216
State tax expense	(1,160)	(318)	188
Foreign taxes at rates less than U.S. rates	(1,071)	(3,101)	(6,838)
Deferred charges on sales of U.S. intellectual property	—	980	980
Equity compensation	519	606	(530)
Tax credits	(2,021)	(1,498)	(911)
Uncertain tax position	1,311	2,048	485
Lapse of statute	(1,214)	(1,521)	(495)
Change of valuation allowance on foreign tax credit	—	314	—
Earnout adjustment	—	(190)	(1,184)
Repatriation tax net of foreign tax credits	—	16,564	—
Net deferred tax asset re-measurement	—	3,883	—
Tax audits	658	726	543
Withholding taxes	1,185	2,880	—
Global intangible low-taxed income net of foreign tax credits	2,326	—	—
Return to provision	(1,417)	711	—
AMT on acquisition	—	621	—
SAB 118 adjustments	(2,676)	—	—
Other	1,010	936	855
Total expense	\$(9,325)	\$25,443	\$12,309

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a corporate tax rate decrease from 35% to 21% effective for tax years beginning after December 31, 2017, the transition of U.S. international taxation from a worldwide tax system to a modified territorial system, and a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings as of December 31, 2017.

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On December 22, 2017, Staff Accounting Bulletin No. 118 (“SAB 118”) was issued to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations)

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NATUS MEDICAL INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

in reasonable detail to complete the accounting for certain income tax effects of the Act. In the fourth quarter of 2017, the Company recorded a provisional amount of \$20.5 million of tax expense related to the Act. In the fourth quarter of 2018, the Company completed its accounting for the impact of the Act and recorded a reduction to tax expense of \$2.7 million.

The Act created new taxes on certain foreign-sourced earnings such as global intangible low-taxed income (“GILTI”) under IRC Section 951A, which is effective for the Company for tax years beginning after January 1, 2018. For the year ended December 31, 2018, the Company has calculated its best estimate of the impact of the GILTI in its income tax provision in accordance with its understanding of the Act and guidance available as of the date of this filing. The Company has made a policy election to treat the GILTI as a period cost and does not recognize deferred taxes when basis differences exist that are expected to affect the amount of the GILTI inclusion upon reversal.

At December 31, 2018, the Company had deferred tax assets attributable to U.S. state net operating loss carryforwards of \$28.0 million, of which an immaterial amount will begin to expire in 2019. At December 31, 2018, the Company had U.S. state R&D credit carryforwards of \$0.5 million, which will begin to expire in 2021. At December 31, 2018, the Company had \$0.1 million of U.S. foreign tax credit carryforwards that can be used to offset future U.S. tax liabilities related to foreign source taxable income. The foreign tax credits will start to expire in 2022.

At December 31, 2018, certain foreign subsidiaries had deferred tax assets attributable to net operating loss carryforwards as follows: \$1.2 million in France and \$0.5 million in Canada. These foreign net operating loss carryforwards, if not utilized to offset taxable income in future periods, will expire in various amounts beginning in 2028.

A valuation allowance is provided when it is more likely than not that some portion or all of the deferred tax assets will not be realized. Accordingly, valuation allowances of \$0.6 million and \$5.9 million were recorded at December 31, 2018 and 2017, respectively. The decrease of \$5.3 million in valuation allowance was primarily due to a valuation allowance recorded against the Company's net operating loss carryforward in France that was released upon completion of an audit, and foreign tax credit carryforward in the U.S. utilized as part of the Tax Reform. The realizability of the deferred tax assets is primarily dependent on the Company's ability to generate sufficient taxable income in future periods. The Company's management weighed the aggregate effect of all positive evidence and negative evidence in determining the likelihood of realization of the deferred tax assets. The factors used by management to collect evidence included historical earnings of the applicable taxing jurisdiction, the cash refund opportunity to utilize the tax losses, and the future forecast of profitability in the jurisdiction. Weighing all the positive and negative evidence, the Company has recorded a valuation allowance related primarily to net operating losses in certain foreign jurisdictions and U.S. foreign tax credits where it is more likely than not that the tax benefit of the net operating losses and tax credits will not be realized.

There are no changes to the position on the Company's permanent reinvestment of its earnings from foreign operations. As of December 31, 2018, the Company intends to distribute all of the earnings from Excel-Tech and Natus Ireland in excess of their operational needs. The Company has recorded a deferred tax liability of \$0.5 million accordingly for 5% Canadian withholding tax on the expected Excel-Tech distribution to Natus Ireland. Natus Ireland has 0% withholding tax under domestic exemption and therefore, no liability has been recorded. The Company intends on permanently reinvesting the earnings of its remaining foreign subsidiaries. The other remaining foreign subsidiaries have both the intent and ability to indefinitely reinvest its undistributed earnings.

Uncertain Tax Positions

A reconciliation of the beginning and ending amount of unrecognized tax benefits (excluding interest and penalties) is as follows (in thousands):

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NOTES TO CONSOLIDATED FINANCIAL STATEMENTS-(Continued)

Years Ended December 31, 2018, 2017 and 2016

Balance at January 1, 2016	\$6,314
Increases for tax positions related to prior years	174
Increases for tax positions related to the current year	70
Lapse of statutes of limitations	(475)
Foreign exchange difference	(185)
Balance at January 1, 2017	\$5,898
Increases for tax positions related to prior years	747
Increases for tax positions related to the current year	1,712
Lapse of statutes of limitations	(1,393)
Foreign exchange difference	53
Balance at January 1, 2018	\$7,017
Increases for tax positions related to prior years	526
Increases for tax positions related to the current year	699
Lapse of statutes of limitations	(965)
Foreign exchange difference	(50)
Balance at December 31, 2018	\$7,227

For the year ended December 31, 2018, unrecognized tax benefits increased by \$0.2 million and \$0.8 million of tax expense in the income tax provision were recorded. The increase was primarily attributable to the increase in uncertain tax positions related to the current year in certain jurisdictions.

The unrecognized tax benefits for the tax years ended December 31, 2018, 2017 and 2016 were \$7.2 million, \$7.0 million and \$5.9 million, respectively which include \$6.5 million, \$4.0 million and \$2.5 million, respectively that would impact the effective tax rate if recognized.

The Company expects a range from zero to \$3.7 million of unrecognized tax benefit that will impact the effective tax rate in the next 12 months due to the lapse of statute of limitations provided that no taxing authority conducts a new examination.

At December 31, 2018, 2017 and 2016, the Company had cumulatively accrued \$0.5 million, \$0.6 million, and \$0.6 million for estimated interest and penalties related to uncertain tax positions. The Company records interest and penalties related to recognized tax positions as a component of income tax expense (benefit), which totaled approximately \$(0.08) million, \$(0.01) million, and \$0.2 million for the years ended December 31, 2018, 2017, and 2016, respectively.

The Company is currently unaware of any uncertain tax positions that could result in significant additional payments, accruals, or other material deviation in this estimate over the next 12 months.

The Company's tax returns remain open to examination as follows: U.S. federal, 2015 through 2018; U.S. states, generally 2014 through 2018; and significant foreign jurisdictions, generally 2014 through 2018.

18—EMPLOYEE BENEFIT PLAN

The Company offers pre-tax and after-tax 401(k) savings plan options under which eligible U.S. employees may elect to have a portion of their salary deferred and contributed to the plan. Employer matching contributions are determined by management and are discretionary. Employer matching contributions were \$4.7 million, \$2.5 million, and \$1.5 million respectively, in the years ended December 31, 2018, 2017, and 2016. For new hires, employer contributions vest ratably over the first two years of employment.

19—SEGMENT, CUSTOMER, AND GEOGRAPHIC INFORMATION

The Company operates in one reportable segment, which is presented as the aggregation of the Neuro, Newborn Care, and Otometrics operating segments. Through the one reportable segment the Company is organized on the basis of the healthcare products and services provided which are used for the screening, detection, treatment, monitoring and

tracking of common medical ailments in newborn care, hearing impairment, neurological dysfunction, epilepsy, and sleep disorders.

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Years Ended December 31, 2018, 2017 and 2016

End-users customer base includes hospitals, clinics, laboratories, physicians, nurses, audiologists, and governmental agencies. Most of the Company's international sales are to distributors who resell products to end users or sub-distributors. The Company's foreign countries' revenue is determined based on the customer's billing address.

Revenue information by geographic region is as follows (in thousands):

	Years Ended December 31,		
	2018	2017	2016
Consolidated Revenue:			
United States	\$300,860	\$270,860	\$250,694
Foreign countries	230,031	230,110	131,198
	\$530,891	\$500,970	\$381,892
Revenue by End Market:			
Neuro			
Devices and Systems	\$200,767	\$171,315	\$168,200
Supplies	67,032	59,955	58,681
Services	12,000	11,886	11,641
Total Neuro Revenue	\$279,799	\$243,156	\$238,522
Newborn Care			
Devices and Systems	\$63,549	\$77,573	\$72,562
Supplies	39,622	43,732	47,674
Services	20,396	22,325	23,134
Total Newborn Care Revenue	\$123,567	\$143,630	\$143,370
Otometrics			
Devices and Systems	\$119,269	\$107,769	\$—
Supplies	8,256	6,415	—
Services	—	—	—
Total Otometrics Revenue	\$127,525	\$114,184	\$—
Total Revenue	\$530,891	\$500,970	\$381,892

Long-lived asset information by geographic region is as follows (in thousands):

	Years Ended	
	December 31,	
	2018	2017
Property and equipment, net:		
United States	\$10,019	\$10,128
Ireland	5,083	3,178
Canada	4,504	5,068
Denmark	1,371	1,158
Argentina	999	1,591
Other foreign countries	937	948
	\$22,913	\$22,071

During the years ended December 31, 2018, 2017 and 2016, no single customer or foreign country contributed to more than 10% of revenue.

20—COMMITMENTS AND CONTINGENCIES

Leases—The Company has entered into noncancelable operating leases for some of the facilities including related office equipment in the U.S. and internationally through 2026. Minimum lease payments under noncancelable operating leases as of December 31, 2018 are as follows (in thousands):

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	Operating Leases
Year Ending December 31,	
2019	\$ 8,092
2020	6,951
2021	5,290
2022	3,423
2023	2,426
Thereafter	1,365
Total minimum lease payments	\$ 27,547

Rent expense, which is recorded on the straight-line method from commencement over the period of the lease, totaled \$7.8 million, \$6.7 million and \$5.3 million in 2018, 2017, and 2016, respectively.

Purchase commitments—The Company has various purchase obligations for goods or services totaling \$66.7 million at December 31, 2018, which are expected to be paid within the next year.

Legal matters—The Company may from time to time become a party to various legal proceedings or claims that arise in the ordinary course of business. The Company does not believe that any current legal or administrative proceedings are likely to have a material effect on business, financial condition, or results of operations.

In January 2017, a putative class action lawsuit (*Badger v. Natus Medical Incorporation, et al.*, No. 17-cv-00458-JSW) alleging violations of federal securities laws was filed in the United States District Court for the Northern District of California, naming as defendants the Company and certain officers and a director. In July 2017, plaintiffs filed an amended complaint with a new lead plaintiff (*Costabile v. Natus Medical Incorporation, et al.*, No. 17-cv-00458-JSW) alleging violations of federal securities laws based on allegedly false and misleading statements. The defendants moved to dismiss the Amended Complaint, and in February 2018 the motion to dismiss was granted with leave to amend. The plaintiffs re-filed an amended complaint in April 2018 and Natus responded in May 2018. In December 2018, the Amended Complaint was again dismissed with leave to amend. The Company continues to believe that the plaintiffs' allegations are without merit, and intended to vigorously defend against the claims. The Company believes the likelihood of an unfavorable outcome from this action is remote.

21—FAIR VALUE MEASUREMENTS

ASC 820 defines fair value, establishes a framework for measuring fair value and expands disclosures about fair value measurements. Fair value is defined under ASC 820 as the exit price associated with the sale of an asset or transfer of a liability in an orderly transaction between market participants at the measurement date. ASC 820 establishes the following three-tier fair value hierarchy, which prioritizes the inputs used in measuring fair value:

Level 1—Quoted prices (unadjusted) in active markets that are accessible at the measurement date for assets or liabilities. The fair value hierarchy gives the highest priority to Level 1 inputs.

Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets and liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3—Unobservable inputs that are used when little or no market data is available. The fair value hierarchy gives the lowest priority to Level 3 inputs.

The derivative financial instruments described in Note 11 are measured at fair value on a recurring basis and are presented on the consolidated balance sheets at fair value. The table below presents the fair value of the derivative financial instruments as well as the classification on the consolidated balance sheet (in thousands):

	December 31, 2017	Additions	Payments	Adjustments	December 31, 2018
Liabilities:					
Interest Rate Swap \$	—\$ 77	\$	—\$	—\$	77
Total \$	—\$ 77	\$	—\$	—\$	77

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Years Ended December 31, 2018, 2017 and 2016

The Company estimates the fair value of the interest rate swaps by calculating the present value of the expected future cash flows of each swap. The calculation incorporated the contractual terms of the derivatives, observable market interest rates which are considered to be Level 2 inputs, and credit risk adjustments, if any, to reflect the counterpart's as well as the Company's nonperformance risk. As of December 31, 2018, there have been no events of default under the interest rate swap agreement.

The following financial instruments are not measured at fair value on the consolidated balance sheet as of December 31, 2018 and 2017, but require disclosure of fair values: cash and cash equivalents, accounts receivable, and accounts payable. The carrying value of these financial instruments approximates fair values because of the relatively short maturity.

The carrying amount of the Company's short-term and long-term debt approximates fair value based on Level 2 inputs since the debt carries a variable interest rate that is tied to the current LIBOR rate plus a spread.

During the third quarter of 2014, the Company listed the facility in Mundelein, Illinois for sale. This asset was thereafter measured at fair value less cost to sell and was classified as a Level 2 asset. On August 6, 2018, the Company sold the Mundelein facility for the carrying value of \$1.2 million.

The Company also has contingent consideration associated with earnouts from acquisitions. Contingent consideration liabilities are classified as Level 3 liabilities, as the Company use unobservable inputs to value them, which is a probability-based income approach. Contingent considerations are classified as accrued liabilities on the consolidated balance sheets. Subsequent changes in the fair value of contingent consideration liabilities are recorded within the income statement as an operating expense.

Contingent consideration associated with earnouts from acquisitions is as follows (in thousands):

	December 31, 2017	Additions	Payments	Adjustments	December 31, 2018
Liabilities:					
Contingent consideration	\$ 147	\$ —	—\$ (147)	\$ —	—
Total	\$ 147	\$ —	—\$ (147)	\$ —	—

The significant unobservable inputs used in the fair value measurement of contingent consideration related to the acquisitions are annualized revenue forecasts developed by the Company considering the probability of achievement of those revenue forecasts. Significant increases (decreases) in these unobservable inputs in isolation would result in a significantly lower (higher) fair value measurement.

ITEM 16. Form 10-K Summary

Not Applicable.

EXHIBIT INDEX

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Exhibit No.	Exhibit	Incorporated By Reference		
		Filing	Exhibit No.	File No. File Date
<u>3.1</u>	<u>Natus Medical Incorporated Amended and Restated Certificate of Incorporation</u>	S-1	3.1.1	333-44138 8/18/2000
<u>3.2</u>	<u>Certificate of Amendment of the Amended and Restated Certificate of Incorporation</u>	8-K	3.1	000-33001 9/13/2012
<u>3.3</u>	<u>Natus Medical Incorporated Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock</u>	8-A	3.1.2	000-33001 9/6/2002
<u>3.4</u>	<u>Amended and Restated Bylaws of Natus Medical Incorporated</u>	8-K	3.1	000-33001 12/7/2018
<u>10.1</u>	<u>Form of Indemnification Agreement between Natus Medical Incorporated and each of its directors and officers</u>	S-1	10.1	333-44138 8/18/2000
<u>10.1.1*</u>	<u>2018 Equity Incentive Plan</u>	8-K	10.1	000-33001 12/18/2018
<u>10.1.2*</u>	<u>Form of Stock Option Awards Agreement under the 2018 Equity Incentive Plan</u>	8-K	10.1.1	000-33001 12/18/2018
<u>10.1.3*</u>	<u>Form of Restricted Stock Award Agreement under the 2018 Equity Incentive Plan</u>	8-K	10.1.2	000-33001 12/18/2018
<u>10.1.4</u>	<u>Form of Restricted Stock Unit Agreement under the 2018 Equity Incentive Plan</u>	8-K	10.1.3	000-33001 12/18/2018
<u>10.1.5*</u>	<u>Form of Performance Stock Unit Agreement under the 2018 Equity Incentive Plan</u>	8-K	10.1.4	000-33001 12/18/2018
<u>10.2*</u>	<u>Natus Medical Incorporated Amended and Restated 2000 Stock Awards Plan</u>	8-K	10.1	000-33001 1/4/2006
<u>10.2.1*</u>	<u>Form of Option Agreement under the Amended and Restated 2000 Stock Awards Plan</u>	S-1	10.3.1	333-44138 8/18/2000
<u>10.2.2*</u>	<u>Form of Restricted Stock Purchase Agreement under the Amended and Restated 2000 Stock Awards Plan</u>	10-Q	10.2	000-33001 8/9/2006
<u>10.2.3*</u>	<u>Form of Restricted Stock Unit Agreement under the Amended and Restated 2000 Stock Awards Plan</u>	10-K	10.2.3	000-33001 3/14/2008
<u>10.3*</u>	<u>Natus Medical Incorporated 2000 Director Option Plan</u>	10-Q	10.02	000-33001 5/9/2008
<u>10.3.1*</u>	<u>Form of Option Agreement under the 2000 Director Option Plan</u>	S-1	10.4.1	333-44138 8/18/2000
<u>10.4*</u>	<u>Natus Medical Incorporated 2000 Supplemental Stock Option Plan</u>	S-1	10.15	333-44138 2/9/2001
<u>10.4.1*</u>	<u>Form of Option Agreement for 2000 Supplemental Stock Option Plan</u>	S-1	10.15.1	333-44138 2/9/2001
<u>10.5*</u>	<u>Natus Medical Incorporated 2000 Employee Stock Purchase Plan and form of subscription agreement thereunder</u>	8-K	10.2	000-33001 1/4/2006
<u>10.6*</u>	<u>[Amended] 2011 Stock Awards Plan</u>	14-A	—	000-33001 4/20/2011
<u>10.6.1*</u>	<u>Form of Stock Option Award Agreement under the [Amended] 2011 Stock Plan</u>	10-Q	10.1	000-33001 11/7/2011
<u>10.6.2*</u>	<u>Form of Restricted Stock Award Purchase Agreement</u>	10-Q	10.2	000-33001 11/7/2011

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Exhibit No.	Exhibit	Incorporated By Reference		
		Filing	Exhibit No.	File No. File Date
<u>10.6.3*</u>	<u>Form of Restricted Stock Unit Agreement</u>	10-Q	10.3	000-33001 11/7/2011
<u>10.7*</u>	<u>2011 Employee Stock Purchase Plan</u>	14-A	—	000-33001 4/20/2011
<u>10.7.1*</u>	<u>2011 Employee Stock Purchase Plan Subscription Agreement</u>	14-A	—	000-33001 4/20/2011
	<u>Form of Employment Agreement between Natus Medical</u>			
<u>10.8*</u>	<u>Incorporated and each of its executive officers other than its</u>	10-K	10.10	000-33001 3/10/2009
	<u>Chief Executive Officer and Chief Financial Officer</u>			
	<u>Form of Amendment to Employment Agreement between</u>			
<u>10.8.1*</u>	<u>Natus Medical Incorporated and each of its executive officers</u>	10-K		000-33001 3/16/2015
	<u>other than its Chief Executive Officer and Chief Financial</u>			
	<u>Officer</u>			
	<u>Amended employment agreement between Natus Medical</u>			
<u>10.9*</u>	<u>Incorporated and its Chief Executive Officer, James B.</u>	8-K	99.1	000-33001 4/22/2013
	<u>Hawkins dated April 19, 2013</u>			
	<u>Terms of Resignation between Natus Medical Incorporated and</u>			
<u>10.10*</u>	<u>James B. Hawkins dated July 11, 2018</u>	10-Q	10.16	000-33001 8/8/2018
	<u>Credit Agreement between Natus Medical Incorporated and</u>			
<u>10.11</u>	<u>CitiBank, NA dated October 9, 2015</u>	8-K	10.1	000-33001 10/9/2015
	<u>Agreement For the Acquisition of Medical Devices between</u>			
<u>10.12</u>	<u>Medix ICSA and the Ministry of Health of the Republic of</u>	10-Q		000-33001 2/29/2016
	<u>Venezuela dated October 15, 2015</u>			
	<u>Amendment to Agreement For the Acquisition of Medical</u>			
<u>10.13</u>	<u>Devices between Medix ICSA and the Ministry of Health of</u>	10-Q	10.2	000-33001 11/3/2016
	<u>the Republic of Venezuela dated October 15, 2015</u>			
	<u>Credit Agreement, dated September 23, 2016, between the</u>			
<u>10.14</u>	<u>Company, JP Morgan Chase Bank, N.A. and Citibank, N.A.</u>	10-Q	10.1	000-33001 11/3/2016
	<u>Master Purchase Agreement, dated September 25, 2016,</u>			
<u>10.15</u>	<u>between GN Hearing A/S, GN Nord A/S and the Company</u>	10-Q	10.3	000-33001 11/3/2016
	<u>Forms of Employment Agreement between Natus Medical</u>			
<u>10.16*</u>	<u>Incorporated and Jonathan A. Kennedy dated August 24, 2018</u>	8-K	99.1	000-33001 8/29/2018
	<u>Form of Employment Agreement between Natus Medical</u>			
<u>10.17*</u>	<u>Incorporated and Drew Davies dated October 1, 2018</u>	10-Q	10.18	000-33001 11/8/2018
<u>21.1</u>	<u>Significant Subsidiaries of the Registrant</u>			

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Exhibit No.	Exhibit	Incorporated By Reference		
		Filing	Exhibit No.	File No. File Date
<u>23.1</u>	<u>Consent of Independent Registered Public Accounting Firm</u>			
<u>24.1</u>	<u>Power of Attorney (included on signature page)</u>			
<u>31.1</u>	<u>Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>			
<u>31.2</u>	<u>Certification of Principal Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002</u>			
<u>32.1</u>	<u>Certification of Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002</u>			
101.INS	XBRL Instance Document			
101.SCH	XBRL Taxonomy Extension Schema Document			
101.CAL	XBRL Taxonomy Extension Label Calculation Linkbase Document			
101.DEF	XBRL Taxonomy Extension Definition Document			
101.LAB	XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document			

* Indicates a management contract or compensatory plan or arrangement