

**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, 2019**

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the Transition Period From _____ to _____
Commission file number: **001-36309**

INOGEN, INC.

(Exact name of registrant as specified in its charter)

Delaware

State or other jurisdiction of
incorporation or organization

**326 Bollay Drive
Goleta, California**

Address of principal executive offices

33-0989359

I.R.S. Employer
Identification No.

93117

Zip Code

Registrant's telephone number, including area code **(805) 562-0500**

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, \$0.001 par value	INGN	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 filing requirements for the past 90 days. Yes ☒ No ☐

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

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

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant, based on the closing price of the registrant's common stock on the last business day of its most recently completed second fiscal quarter, as reported on The NASDAQ Global Select Market, was approximately \$811.4 million. Shares of common stock held by each executive officer and director and by each other person who may be deemed to be an affiliate of the registrant, have been excluded from this computation. The determination of affiliate status for this purpose is not necessarily a conclusive determination for other purposes.

As of February 21, 2020, the registrant had 22,033,576 shares of common stock, par value \$0.001, outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be filed with the Securities and Exchange Commission in connection with the registrant's 2020 Annual Meeting of Stockholders, which will be filed subsequent to the date hereof, are incorporated by reference into Part III of this Form 10-K. Such Proxy Statement will be filed with the Securities and Exchange Commission not later than 120 days following the end of the registrant's fiscal year ended December 31, 2019.

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PART I

Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, or the Securities Act, and Section 21E of the Securities Exchange Act of 1934, as amended, or the Exchange Act, that are based on our management's beliefs and assumptions and on information currently available to our management. The forward-looking statements are contained principally in the sections entitled "Business," "Risk Factors," and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Forward-looking statements include, but are not limited to, statements concerning the following:

- information concerning our possible or assumed future cash flow, revenue, sources of revenue and results of operations, operating and other expenses;
- our assessment and expectations regarding reimbursement rates, future rounds of competitive bidding, and future changes in rental revenue;
- our expectations regarding regulatory approvals and government and third-party payor coverage and reimbursement;
- our ability to develop new products, improve our existing products and increase the value of our products, including the integration of non-invasive ventilation technology into our existing business;
- our expectations regarding the timing of new products and product improvement launches, as well as product features and specifications;
- market share expectations, unit sales, business strategies, financing plans, expansion of our business, competitive position, industry environment, and potential growth opportunities;
- our expectations regarding the market size, market growth and the growth potential for our business;
- our ability to grow our business and enter new markets;
- our expectations regarding the average selling price and manufacturing costs of our products, including our expectations to continue to reduce average unit costs for our systems, as well as the availability of our manufacturing components;
- our expectation to expand our sales and marketing channels, including through efforts to focus on improving the productivity and increasing the size of our sales team, the impact of changes to our rental intake criteria, scaling a separate rental intake team, and expanding our advertising campaigns;
- our expectations with respect to our European and U.S. facilities and our expectations with respect to our contract manufacturer in Europe;
- our expectations regarding tariffs being imposed by the United States on certain imported materials and products;
- our ability to successfully acquire and integrate companies and assets, including our recent acquisition of New Aera, Inc.;
- our expectations regarding the impact and implementation of trade regulations on our supply chain;
- our expectations of future accounting pronouncements or changes in our accounting policies;
- our assessments and estimates of our effective tax rate;
- our internal control environment;
- the effects of seasonal trends on our results of operations and estimated hiring plans;
- our expectation regarding the market acceptance of our Inogen One G5 portable oxygen concentrator;
- our expectation that our existing capital resources and the cash to be generated from expected product sales and rentals will be sufficient to meet our projected operating and investing requirements for at least the next twelve months; and
- the effects of competition.

Forward-looking statements include statements that are not historical facts and can be identified by terms such as "anticipates," "believes," "could," "seeks," "estimates," "expects," "intends," "may," "plans," "potential," "predicts," "projects," "should," "will," "would," or similar expressions and the negatives of those terms.

Forward-looking statements involve known and unknown risks, uncertainties, and other factors that may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements. We discuss these risks in greater detail in Part I, Item 1A, “Risk Factors,” and elsewhere in this Annual Report on Form 10-K filed with the Securities and Exchange Commission, or SEC. Given these uncertainties, you should not place undue reliance on these forward-looking statements. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for us to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this Annual Report on Form 10-K may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

The forward-looking statements made in this Annual Report on Form 10-K relate only to events as of the date on which the statements are made. Except as required by law, we assume no obligation to update these forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future.

This Annual Report on Form 10-K also contains estimates, projections and other information concerning our industry, our business, and the markets for certain diseases, including data regarding the estimated size of those markets, and the incidence and prevalence of certain medical conditions. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances reflected in this information. Unless otherwise expressly stated, we obtained this industry, business, market and other data from reports, research surveys, studies and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources.

“Inogen,” “Inogen One,” “Inogen One G2,” “Inogen One G3,” “G4,” “G5,” “Oxygenation,” “Live Life in Moments, not Minutes,” “Never Run Out of Oxygen,” “Oxygen Therapy on Your Terms,” “Oxygen.Anytime.Anywhere,” “Reclaim Your Independence,” “Intelligent Delivery Technology,” “Inogen At Home,” the Inogen design, “TIDAL ASSIST,” “TAV,” and “SIDEKICK” are registered trademarks with the United States Patent and Trademark Office of Inogen, Inc. We own pending applications for “Inogen,” “MOMENTUM TRANSFER” and “SONIC BLADE” with the United States Patent and Trademark Office. We own trademark registrations for the mark “Inogen” in Australia, Canada, South Korea, Mexico, Europe (European Union Registration), Iceland, India, Israel, Japan, New Zealand, Norway, Peru, Turkey, Singapore, and Switzerland. We own pending applications for the mark “Inogen” in Argentina, Brazil, Chile, China, Columbia, Ecuador, Kuwait, Malaysia, Paraguay, South Africa and Uruguay. We own a trademark registration for the mark “イノジェン” in Japan. We own trademark applications for the marks “印诺真” and “艾诺根” in China. We own trademark registrations for the mark “Inogen One” in Australia, Canada, China, South Korea, Mexico, and Europe (European Union Registration). We own a trademark registration for the mark “Satellite Conserver” in Canada. We own a trademark registration for the mark “Inogen At Home” in Europe (European Union Registration). We own trademark registrations for the mark “G4” in Europe (European Union Registration) and the United Kingdom. We own trademark registrations for the mark “G5” in Europe (European Union Registration) and the United Kingdom. We own trademark applications for the Inogen design in Bolivia and China. Other service marks, trademarks, and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

In this Annual Report on Form 10-K, “we,” “us” and “our” refer to Inogen, Inc. and its subsidiary.

ITEM 1. BUSINESS

General

We were incorporated in Delaware on November 27, 2001. We are a medical technology company that primarily develops, manufactures and markets innovative portable oxygen concentrators used to deliver supplemental long-term oxygen therapy to patients suffering from chronic respiratory conditions. Long-term oxygen therapy is defined as the provision of oxygen therapy for use at home in patients who have chronic low blood oxygen levels (hypoxemia). Traditionally, these patients have relied on stationary oxygen concentrator systems for use in the home and oxygen tanks or cylinders for mobile use, which we call the delivery model. The tanks and cylinders must be delivered regularly and have a finite amount of oxygen, which requires patients to plan activities outside of their homes around delivery schedules and a finite oxygen supply. Additionally, patients must attach long, cumbersome tubing to their stationary concentrators simply to enable mobility within their homes. Our proprietary Inogen One® systems concentrate the air around the patient to offer a single source of supplemental oxygen anytime, anywhere with a portable device weighing as little as approximately 2.8 pounds with a single battery. Our Inogen One systems range from 2.6 to 6.5 hours of battery life with a single battery and can be plugged into an outlet when at home, in a car, or in a public place with outlets available. We believe our Inogen One systems reduce the patient's reliance on stationary concentrators and scheduled deliveries of tanks with a finite supply of oxygen, thereby improving patient quality of life and fostering mobility.

Portable oxygen concentrators represented the fastest-growing segment of the Medicare oxygen therapy market between 2012 and 2018. Based on 2018 traditional fee-for-service Medicare data, we estimate the number of patients using portable oxygen concentrators represents approximately 13.9% of the total long-term oxygen therapy market (and 18.2% of the total ambulatory long-term oxygen therapy market) in the United States, although the traditional fee-for-service Medicare data does not account for private insurance, Medicare Advantage, Medicaid and cash-pay patients in the market. We believe we were the first oxygen therapy manufacturer to employ a direct-to-consumer marketing strategy, meaning we advertise directly to patients, process their physician paperwork, and provide clinical support as needed. While other manufacturers have also begun direct-to-consumer marketing campaigns to drive patient sales, we believe we are the only manufacturer of portable oxygen concentrators that employs a direct-to-consumer rental strategy in the United States, meaning we bill Medicare or insurance on their behalf. To pursue a direct-to-consumer rental strategy, our manufacturing competitors would need to meet national accreditation and state-by-state licensing requirements and secure Medicare billing privileges, as well as compete with the home medical equipment providers who many of our manufacturing competitors sell to across their entire homecare business.

Since adopting our direct-to-consumer rental strategy in 2009, we have directly sold or rented more than 774,000 of our Inogen oxygen concentrators as of December 31, 2019.

We incorporated Inogen Europe Holding B.V., a Dutch limited liability company, on April 13, 2017. On May 4, 2017, Inogen Europe Holding B.V. acquired all issued and outstanding capital stock of MedSupport Systems B.V. (MedSupport) and began operating under the name Inogen Europe B.V. We merged Inogen Europe Holding B.V. and Inogen Europe B.V. on December 28, 2018. Inogen Europe B.V. is the remaining legal entity. We acquired New Aera, Inc. (New Aera) on August 9, 2019.

Our market

We estimate approximately 3 million patients in the United States used long-term oxygen therapy in 2018 based on 2018 traditional fee-for-service Medicare data, commercial payor data and our estimate of the size of additional patient populations, such as the retail sales and Veterans Administration (VA) population. While there is no up-to-date single source of long-term oxygen therapy market data, our current estimate of the market size is based on a recent analysis we conducted with the assistance of a third party and certain internal estimates. We believe that the estimate provided herein approximates the number of oxygen therapy patients in the United States as of 2018. However, while growth rates are subject to change over time, we believe that reduced reimbursement rates in connection with competitive bidding, enhanced Medicare billing requirements, and the conversion from tank deliveries to portable oxygen concentrators (POCs) will help contribute to growth opportunities for POCs that exceed the long-term oxygen therapy market growth rate. Since utilization of long-term oxygen therapy is strongly linked to developed nations with established government reimbursement, western Europe represents our second largest market today behind the United States.

Long-term oxygen therapy has been shown to be a cost-efficient and clinically effective means to treat hypoxemia, a condition in which patients have insufficient oxygen in the blood. Hypoxemic patients are unable to convert oxygen found in the air into the bloodstream in an efficient manner, causing organ damage and poor health. Chronic obstructive pulmonary disease, or COPD, is a leading cause of hypoxemia. Between 65% to 70% of our patient population has been diagnosed with COPD, and as COPD progresses, patients may need long-term oxygen therapy as part of their treatment. Industry sources estimate that approximately 16 million people in the United States have been diagnosed with COPD, with millions more who are unaware they have COPD. COPD is the third leading cause of death in the United States and one of the leading causes of death globally. There are an estimated 251 million individuals worldwide who have COPD, with an estimated greater than 100 million individuals located in China. Smoking is the leading cause of COPD. However, the European Respiratory Journal published a study in July 2019 that concluded ambient air

pollution was associated with lower lung function and increased COPD prevalence based on over 300,000 individuals aged 40 to 69 years.

According to our analysis of 2018 traditional fee-for-service Medicare data, approximately 76% of U.S. long-term oxygen therapy users utilized ambulatory oxygen and the remaining 24% were considered stationary, and either required oxygen twenty-four hours a day, seven days a week, or 24/7, but were not ambulatory, or did not require oxygen 24/7 and only needed nocturnal oxygen. Clinical data has shown that ambulatory patients who use oxygen therapy 24/7, regardless of modality, have approximately two times the survival rate and spend at least 60% fewer days annually in the hospital than non-ambulatory 24/7 oxygen therapy patients. The cost of one year of long-term oxygen therapy is less than the cost of one day in the hospital. In addition, a report from the Centers for Medicare and Medicaid Services (CMS) in 2019 concluded that utilizers of oxygen therapy have lower deaths, hospitalizations, and days in the hospital than those who have a health condition that would support oxygen but do not use it.

Based on 2018 traditional fee-for-service Medicare data, we estimate that approximately 69% of the ambulatory patients rely upon the delivery model, which has the following disadvantages:

- limited flexibility outside the home, dictated by the finite oxygen supply provided by tanks and cylinders and dependence on delivery schedules;
- restricted mobility and inconvenience within the home, as patients must attach long, cumbersome tubing to a noisy stationary concentrator to move within their homes;
- products are not cleared for use on commercial aircraft and cannot plug into a vehicle outlet for extended use; and
- high costs driven by the infrastructure necessary to establish a geographically diverse distribution network to serve patients locally, as well as personnel, fuel and other costs, which have limited economies of scale and generally increase over time.

Portable oxygen concentrators were developed in response to many of the limitations associated with traditional oxygen therapy. Portable oxygen concentrators are designed to offer a self-replenishing, unlimited supply of oxygen that is concentrated from the surrounding air and to operate without the need for oxygen tanks or regular oxygen deliveries, enhancing patient freedom and independence. Additionally, because portable oxygen concentrators do not require the physical infrastructure and service intensity of the delivery model, we believe portable oxygen concentrators can provide long-term oxygen therapy with a lower cost structure.

We believe the following have hindered the market acceptance of portable oxygen concentrators:

- to obtain portable oxygen concentrators, patients are dependent on home medical equipment providers, which have made significant investments in the physical distribution infrastructure to support the delivery model and which we believe are therefore disincentivized to encourage adoption of portable oxygen concentrators;
- home medical equipment providers cannot easily convert their businesses to non-delivery models in oxygen due to low total reimbursement for oxygen therapy, capital expenditure constraints, investments that are spread across multiple product lines, and uncertainty around Medicare reimbursement due to pending Round 2021 competitive bidding winners and reimbursement rates;
- lack of patient and physician awareness of the existence and benefits of portable oxygen concentrators as an oxygen solution instead of the traditional delivery model;
- lack of access to switch from oxygen tank or liquid deliveries to a portable oxygen concentrator using their insurance benefits due to the nature of the capped reimbursement structure;
- constrained manufacturing costs of conventional portable oxygen concentrators, driven by home medical equipment provider preference for products that have lower upfront equipment cost; and
- limitations of conventional portable oxygen concentrators, including bulkiness, poor reliability and lack of suitability beyond intermittent or travel use.

Our solution

Our Inogen One systems provide patients who require long-term oxygen therapy with a reliable, lightweight single solution product that we believe improves quality-of-life, fosters mobility and eliminates dependence on both oxygen tanks and cylinders as well as stationary concentrators. We believe our direct-to-consumer marketing strategy increases our ability to effectively develop, design and market our Inogen One solutions, as it allows us to:

- drive patient awareness of our portable oxygen concentrators through direct marketing, thereby fueling our direct-to-consumer sales channel and creating pull through for our business-to-business channel. Other manufacturers mainly rely upon selling to homecare businesses, many of whom are incentivized to continue to service oxygen patients through the delivery model;
- capture the manufacturer and home medical equipment provider margins on a portion of our revenue, allowing us to focus on the total cost of the solution and to invest in the development of product features instead of being constrained by the price required to attract representation from a distribution channel. For example, we have invested in features that improve patient satisfaction, product durability, reliability and longevity, which increase the cost of our hardware, but reduce the total cost of our solution by reducing our maintenance and repair cost; and
- access and utilize direct patient feedback in our research and development efforts, allowing us to innovate based on this feedback and stay at the forefront of patient preference. For example, certain specifications of the Inogen One G5® and the Inogen One G4® and their accessories and the Inogen Connect platform were created based on direct patient feedback.

We believe the combination of our direct-to-consumer marketing strategy with our focus on designing and developing oxygen concentrator technology has created a best-in-class portfolio of portable oxygen concentrators. Our two most recently released portable product offerings, the Inogen One G5 and the Inogen One G4, at 4.7 and 2.8 pounds with a single battery, respectively, are among the lightest portable oxygen concentrators on the market and offer among the highest oxygen flow capacity per pound. We believe our Inogen One solutions offer the following benefits:

- *Single solution for home, ambulatory, travel (including on commercial aircraft) and nocturnal treatment* We market our Inogen One solutions as single solutions, by which we mean a patient can use our Inogen One systems as their only supplemental oxygen source with no need to also use a stationary concentrator regularly. Our compressors are specifically designed to enable our patients to run our portable oxygen concentrators 24/7, whether powered by battery or plugged into an outlet at home or in a car while the battery is recharging.
- *Reliability.* Our direct relationship to our end customers facilitates product feedback and improvements. We have an integrated engineering structure to ensure design and manufacturing engineers operate as a single team to improve product reliability throughout the product lifecycle. Additionally, with the launch of our Inogen Connect system we can address certain types of reliability issues and provide functionality improvements through our software update capabilities.
- *Effective for nocturnal use.* Our Intelligent Delivery Technology® enables our portable oxygen concentrators to provide consistent levels of oxygen during sleep despite decreased respiratory rates. As a result, patients can rely on our Inogen One portable oxygen concentrators overnight while sleeping.
- *Unparalleled flow capacity.* Our 2.8 pound Inogen One G4 has higher flow capacity than other sub-3 pound portable oxygen concentrators and our Inogen One G5 has higher flow capacity than other sub-5 pound portable oxygen concentrators.
- *User friendly features.* Our systems are designed with multiple user-friendly features, including long battery life and low noise levels in their respective weight categories.

Our Inogen One systems and Inogen At Home system

We market our current portable product offerings, the Inogen One G5, Inogen One G4 and the Inogen One G3®, as single solutions for long-term oxygen therapy. This means our solutions can operate on a 24/7 basis for at least 60 months without a stationary concentrator, with minimal servicing of sieve beds, filters, and accessories. We believe the technology in our Inogen One systems is effective for nocturnal use. Our Inogen One portable oxygen concentrators can operate reliably and cost-effectively over the long period of time needed to service long-term oxygen therapy patients without supplemental use of a stationary concentrator or a replacement portable oxygen concentrator. The following table summarizes our key product features:

	Key Product Specifications		
	Inogen One G5	Inogen One G4	Inogen One G3
Capacity (ml/min)	1,260	630	1,050
Weight (lbs)	4.7 (single battery)	2.8 (single battery)	4.8 (single battery)
	5.7 (double battery)	3.3 (double battery)	5.8 (double battery)
Battery run-time	Up to 6.5 hours	Up to 2.6 hours	Up to 4.7 hours
	(single battery)	(single battery)	(single battery)
	Up to 13 hours	Up to 5 hours	Up to 10 hours
	(double battery)	(double battery)	(double battery)
Technology effective for overnight use	Yes	Yes	Yes
Sound	38 dBA	40 dBA	39 dBA

We have focused our research and development efforts on creating solutions that we believe have overcome the reputation of portable oxygen concentrators as being limited in durability and reliability as well as unsuitable for nighttime or 24/7 use. We specifically designed our compressors for 24/7 use.

All of our Inogen One systems are equipped with Intelligent Delivery Technology, a form of pulse-dose technology from which the patient receives a bolus of oxygen upon inhalation. Pulse-dose technology was developed to extend the number of hours an oxygen tank would last and is generally used on all ambulatory long-term oxygen therapy devices. Our proprietary conserver technology utilizes differentiated triggering sensitivity to quickly detect a breath and ensure oxygen delivery within the first 400 milliseconds of inspiration, the interval when oxygen has the most effect on lung gas exchange. During periods of sleep, respiratory rates typically decrease. Our Inogen One systems actively respond to this changing physiology through the use of proprietary technology that increases bolus size. Our Intelligent Delivery Technology is designed to provide effective levels of blood oxygen saturation during sleep and all other periods of rest and activity that are substantially equivalent to continuous flow systems. We have also launched Inogen Connect, a new wireless connectivity platform for the Inogen One G4 and Inogen One G5 consisting of a front-end mobile application for use by long-term oxygen therapy users and a back-end database portal for use by homecare providers. The Inogen Connect app is compatible with Apple and Android platforms and includes patient features such as oxygen purity status, battery run time, product support functions, notification alerts, and remote software updates. We believe features of the back-end database portal such as remote troubleshooting, equipment health checks, and a location tracker will drive operational efficiencies for home oxygen providers and lower the total cost of servicing oxygen therapy patients.

The Inogen One G5, our latest portable oxygen concentrator released to market in April 2019, is among the lightest products on the market and has higher oxygen production capabilities than the other sub-5 pound portable oxygen concentrators on the market. We believe the performance parameters around our Inogen One systems allow us to serve approximately 90% of the ambulatory long-term oxygen patients based on our analysis of the patients who have contacted us and their clinical needs. Our products enable us to address a patient's particular clinical needs, as well as lifestyle and performance preferences.

The Inogen At Home stationary oxygen concentrator allows us to access the non-ambulatory long-term oxygen therapy patient market and serves as a backup to our Inogen One system for ambulatory patients on our rental service. At approximately 18 pounds, we believe the Inogen At Home concentrator is the lightest five liter per minute continuous flow oxygen concentrator on the market today. Additionally, the Inogen At Home product has low power consumption with worldwide electrical compatibility, which should reduce the cost of electricity for oxygen therapy patients, as well as reduce manufacturing and distribution complexities. While the Inogen One product line is clinically validated for 24/7 use, the Inogen At Home product represents a compelling solution for stationary long-term oxygen therapy patients that do not require a portable solution, which are estimated to represent approximately 24% of total long-term oxygen therapy patients in the United States based on 2018 traditional fee-for-service Medicare data.

Our direct-to-consumer business model has enabled us to receive direct patient feedback, and we have used this feedback to create portable oxygen concentrators that address the full suite of features and benefits critical to patient preference and retention. Our products prevent patients from having to choose between lightweight size, suitability for 24/7 use, reliability, and key features such as battery life, flow and reduced noise levels.

Domestic sales and marketing

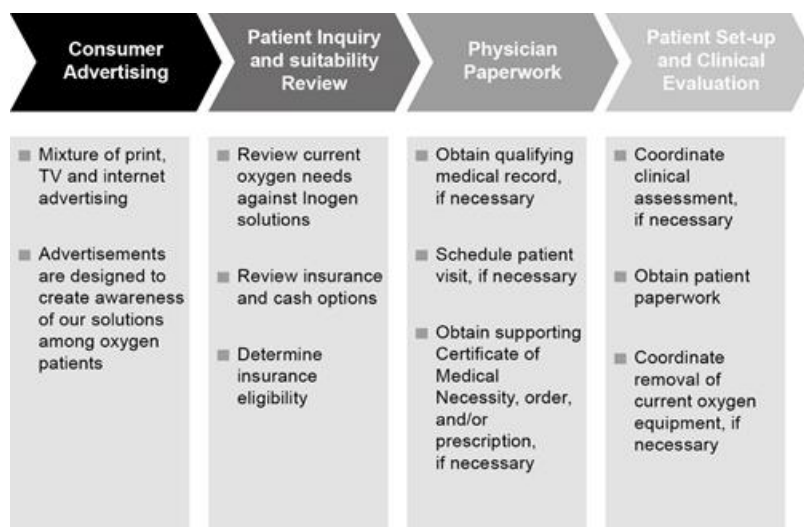
In the United States, we market and distribute our products directly to consumers through a wide variety of direct-to-consumer sales and marketing strategies including consumer advertising, an inside-sales staff, and a physician referral model. Of the \$284.0 million of our 2019 revenue derived from the United States, approximately 55.0% represented direct-to-consumer sales, 37.5% represented sales to traditional home medical equipment providers, distributors (including our private label partner) and resellers, and 7.5% represented direct-to-consumer rentals.

As of December 31, 2019, we employed a marketing team of 8 people, an in-house sales team of 371 people (including 329 inside sales representatives), a field-based sales team of 20 people (including 17 physician sales representatives), and a business-to-business sales and support team of 13 people.

Our direct-to-consumer sales and marketing efforts are focused on generating awareness and demand for our Inogen One systems and Inogen At Home systems among patients, physicians and other clinicians, and third-party payors.

Patients who choose to use their Medicare or private insurance benefits typically rent our systems. Those who purchase our product outright are typically patients who are not eligible to use their insurance benefits due to their capped rental status, prefer our Inogen One G4 and Inogen One G5 products that are not currently available for rent, prefer to own the equipment, prefer new equipment, or have an immediate need for our product that cannot be processed in time by their primary insurance carrier (e.g., an upcoming trip). Our ability to rent to Medicare patients directly, bill Medicare and other third-party payors on their behalf, and service patients in their homes requires that we hold a valid Medicare supplier number, are accredited by an independent agency approved by Medicare, and comply with the differing licensure and process requirements in the 50 states in which we serve patients.

We use a variety of direct-to-consumer marketing strategies to generate interest in our solutions among current oxygen therapy patients. After a patient contacts us, we guide them through product selection and insurance eligibility, and, if they choose to move forward, process the necessary reimbursement and physician paperwork on their behalf, as well as coordinate the shipping, instruction, and clinical setup process. In accordance with Medicare regulations, we do not initially contact patients directly and contact them only upon an inbound inquiry or upon receipt of a physician's order. The chart below describes our United States direct-to-consumer sales and rental process.



We engage in a number of other initiatives to increase awareness, demand, and orders for Inogen One systems and Inogen At Home systems. These include attendance at oxygen therapy support groups, guest speaking arrangements at trade shows, and product demonstrations, as requested. Additionally, we are targeting private payors to become an in-network provider of oxygen therapy solutions, which we expect will reduce patient co-insurance amounts associated with using our solution. We believe this will result in both increased conversion of our initial leads, as well as direct referrals from insurance companies in some cases.

To supplement the direct-to-consumer marketing model, we are also utilizing a physician referral model as a complementary sales method. Under this model, our field sales representatives work with physicians in the representative's territory to help physicians understand our products and the value these products provide for patients. We believe that by educating physicians on our products, we can cost-effectively supplement our direct-to-consumer sales and rentals and capture a greater number of patients earlier in the course of their oxygen therapy.

Our direct-to-consumer marketing strategies also create demand for our products among other homecare equipment providers and business partners. In addition to generating consumer demand, we believe our products can create value for our business partners by either creating a retail sale opportunity for them or by reducing the need for costly home deliveries associated with oxygen tanks.

We also sell to resellers and traditional homecare providers in the United States, Canada, Europe, the Asia-Pacific region, Latin America, the Middle East and Africa that choose to deploy our products to long-term oxygen therapy patients. These customers market the benefits of our products to oxygen therapy patients through consumer advertising and/or retail locations or to physicians through field-based sales representatives. We believe that in addition to the marketing efforts employed by our business customers, our own direct-to-consumer marketing efforts in the United States result in patient interest that our business customers field.

We also sell to traditional homecare providers that offer our products to patients through insurance reimbursement or retail worldwide. Homecare providers that employ the standard delivery model with oxygen tanks need to replace the oxygen tanks on a regular basis by picking up the empty oxygen tanks and delivering full oxygen tanks for the patient. The delivery model has historically necessitated that a homecare provider have a facility near the oxygen patients that it serves and that the provider has invested in personnel, trucks, etc. to facilitate routine deliveries. The cost to deliver the oxygen tanks to patients is significant for many providers in the standard delivery model. Homecare providers that have adopted Inogen products should be able to reduce the costly deliveries associated with oxygen tanks since our products generate their own oxygen and don't need to be refilled. Our business-to-business sales and marketing strategy for these customers is to raise awareness of our solutions and educate homecare providers on how our products may be able to reduce their total cost of ownership of servicing oxygen patients. As a homecare provider ourselves, we are able to help our business customers adopt a non-delivery long-term oxygen therapy model utilizing patient preferred portable oxygen concentrators. We also private label our product with a business partner that sells to traditional homecare providers. Our private label partner employs field sales representatives that call on homecare providers to showcase the benefits of our products.

Concentration of Customers

We primarily sell our products to traditional home medical equipment providers, distributors, and resellers in the United States and in foreign countries on a credit basis. We also sell our products direct-to-consumers on a primarily prepayment basis. For the year ended December 31, 2019, no single customer represented more than 10% of our total revenue. For the years ended December 31, 2018 and 2017, one single customer, OxyGo HQ Florida (previously named Applied Home Healthcare Equipment), our private label distribution partner, represented more than 10% of our total revenue. As of December 31, 2019 and December 31, 2018, two customers each represented more than 10% of our net accounts receivable balance with accounts receivable balances of \$10.7 million and \$5.2 million, respectively, and accounts receivable balances of \$16.2 million and \$4.2 million, respectively.

International

Approximately 21.5% of our total revenue was from outside the United States in 2019. We sell through distributors, resellers, and home medical equipment providers in certain markets within Canada, Europe, the Asia-Pacific region, Latin America, the Middle East, and Africa. We sell our products in 46 countries outside the United States through distributors or directly to large "house" accounts, which include gas companies and home oxygen providers. In this case, we sell to and bill the distributor or house accounts directly, leaving the patient billing, support, and clinical setup to the local provider. As of December 31, 2019, we had 13 people located in the United States who focused on selling our products and providing service and support to distributors and house accounts worldwide and 11 employees located in Europe who provided sales, customer service, and repair services to a portion of our international customers. No single international customer and no single foreign country represented more than 10% of our total revenue in 2019, 2018 or 2017.

International sales revenue was flat at \$78.0 million in 2019 versus \$77.3 million in 2018. While growth was limited in 2019, we believe that the international market is attractive for the following reasons:

- more favorable reimbursement rates in certain countries, including France and the United Kingdom, where portable oxygen concentrators receive higher reimbursement rates than in the United States;
- less developed oxygen delivery infrastructure in some countries. We believe that some countries outside the United States have less developed oxygen delivery infrastructure than in the United States. As a result, portable oxygen concentrators enable providers to reach and service patients they cannot economically reach with the delivery model; and
- an absence of reimbursement for any ambulatory long-term oxygen therapy modalities in some countries, resulting in patients bearing all of the cost of ambulatory long-term oxygen therapy and therefore becoming more involved in the selection of the modality. In Australia, for example, patients shoulder the burden of all costs associated with ambulatory long-term oxygen therapy. In these cases, they tend to choose products like portable oxygen concentrators that provide a higher level of personal freedom.

We will continue to focus on building out our international sales efforts. In 2017, we added a European customer support site in the Netherlands after acquiring a previous distributor, MedSupport, now operating under Inogen Europe B.V. This site offers multi-lingual customer service, repair services, and basic distribution, to improve our European customer support at lower cost. Also in support of our European operations, we began production of our Inogen One G3 concentrator in the fourth quarter of 2017 using a contract manufacturer, Foxconn, located in the Czech Republic to improve our ability to service our European customers, and we began manufacturing the Inogen One G5 concentrators in this facility in the first quarter of 2020.

Order fulfillment and customer support

Our procedures are designed to enable us to package and ship a system directly to the patient in the patient's preferred configuration and we aim to do so the same day the order is received in most cases. This enables us to minimize the amount of finished goods inventory we keep on hand. Our primary logistics partner is United Parcel Service (UPS). UPS supports our domestic shipments and provides additional services that support our direct-to-consumer oxygen therapy program. The UPS pick up service is used to retrieve products requiring repair and systems that are no longer needed by the patient. When necessary, we utilize a courier for white-glove service whereby the courier goes into a patient's home to remove a replacement product from the box, package the failed device and return it to us. In this manner, we are able to operate as a remote provider while maintaining the level of customer service of a local oxygen therapy provider. FedEx primarily supports our international shipments that originate from the United States and limited domestic shipments.

We believe it is important to provide patients with quality customer support to achieve satisfaction with our products and optimal outcomes. As of December 31, 2019, we had a dedicated customer service team of 60 people who were trained on our products, a clinical support team of 22 people who were licensed nurses or respiratory therapists, a rental intake team of 25 people, and a dedicated billing services team of 78 people. We provide our patients with a dedicated 24/7 hotline. Via the hotline, patients have direct access to our customer service representatives, who can handle product-related questions. Additionally, clinical staff is on call 24/7 and available to patients whenever either the patient or the customer service representative deems appropriate. Our rental intake staff supports patients who wish to use their rental insurance benefits to receive our products and services. Our dedicated billing services team is available to answer patient questions regarding invoicing, reimbursement, and account status during normal business hours. We receive no additional reimbursement for patient support, but provide high-quality customer service to enhance patient comfort, satisfaction, compliance, and safety with our products.

Third-party reimbursement

Medicare and private insurance rentals represented approximately 5.9% of our total revenue in 2019, down slightly from 6.2% of our total revenue in 2018, primarily due to increased sales revenue and declines in patients on service. In cases where we rent our long-term oxygen therapy solutions directly to patients, we bill third-party payors, such as Medicare or private insurance, for monthly rentals on behalf of our patients. We process and coordinate all physician paperwork necessary for reimbursement of our solutions. A common medical criterion for long-term oxygen therapy reimbursement is insufficient blood oxygen saturation level. Our team in sales and rental intake are trained on how to verify benefits, review medical records and process physician paperwork. Additionally, an independent internal review is performed, and our products are not deployed until after physician paperwork is processed and reimbursement eligibility is verified and communicated to the patient.

We rely significantly on reimbursement from Medicare and private payors, including Medicare Advantage plans, Medicaid and patients for our rental revenue. For the year ended December 31, 2019, approximately 81.1% of our rental revenue was derived from Medicare's traditional fee-for-service reimbursement programs. The U.S. list price for our stationary oxygen rentals (HCPCS E1390)

is \$260 per month and the U.S. list price for our oxygen generating portable equipment (OGPE) rentals (HCPCS E1392) is \$70 per month. The average Medicare reimbursement rates in competitive bidding areas in 2018 were \$77.03 a month for E1390 and \$36.06 a month for E1392. These are the two primary codes that we bill to Medicare and other payors for our oxygen product rentals.

Effective January 1, 2019, Medicare beneficiaries may receive durable medical equipment from any Medicare-enrolled supplier until new contracts are in effect under competitive bidding Round 2021, which is expected to begin on January 1, 2021. Reimbursement rates between January 1, 2019 and December 31, 2020 are set at the current pricing level throughout the United States for all Medicare patients, subject to Consumer Price Index (CPI) and budget neutrality adjustments. Pricing in competitive bidding areas is subject to annual CPI adjustments beginning in 2019 until Round 2021 begins. However, Centers for Medicare and Medicaid Services (CMS) also changed the calculation on budget neutrality to apply the offset to all oxygen and oxygen equipment classes beginning January 1, 2019 instead of previously only applying these adjustments to stationary oxygen equipment and oxygen contents. Based on these CPI and budget neutrality adjustments, effective January 1, 2019 the average Medicare reimbursement rates in former competitive bidding areas decreased to \$72.92 a month for E1390 and \$35.72 a month for E1392. Medicare also established new payment classes for liquid oxygen equipment and high flow portable liquid oxygen contents effective January 1, 2019. Effective January 1, 2020, the average Medicare reimbursement rates were increased by 1.5% to \$73.98 a month for E1390 and \$36.25 a month for E1392 in these regions that were previously subject to competitive bidding. In addition, the average Medicare reimbursement rates in non-rural, non-former competitive bidding areas increased by 3.5% to \$74.84 a month for E1390 and \$36.87 a month for E1392.

In Round 2021 of durable medical equipment, prosthetics, orthotics and supplies (DMEPOS) competitive bidding program, there have been some revisions to the bidding methodology including bid surety bond requirements, lead item pricing, and setting reimbursement rates at the maximum winning bid rate instead of the median winning bid rate. In the prior round of competitive bidding, our products were categorized in the product category of respiratory equipment and related supplies and accessories, which included oxygen equipment, continuous positive airway pressure (CPAP) devices and respiratory assist devices (RADs) and related supplies and accessories. In Round 2021 of the competitive bidding program, oxygen and oxygen equipment is its own product category and the lead item has been established as E1390. However, due to the lead item pricing methodology based on the 2015 standard Medicare fee schedule, E1392 reimbursement rates could be reduced significantly (we estimate approximately 42%) even if E1390 reimbursement rates do not change. This would lead to combined E1390 plus E1392 reimbursement rates to decrease by approximately 15%. The bidding window closed on September 18, 2019 and we bid in 129 of the 130 total Competitive Bidding Areas (CBAs). It is unclear how pricing will be impacted due to these new bids. We expect contracts and pricing to be announced in 2020.

In addition to regional pricing, CMS imposed different pricing on “frontier states” and rural areas. CMS defines frontier states as states where more than 50% of the counties in the state have a population density of 6 people or less per square mile and rural states are defined as states where more than 50% of the population lives in rural areas per census data. Current frontier states include MT, ND, SD and WY; rural states include ME, MS, VT and WV; and non-contiguous United States areas include AK, HI, Guam and Puerto Rico. Effective June 1, 2018 through December 31, 2020, for frontier and rural states, frontier and rural zip codes in non-frontier/rural states and non-contiguous United States areas, the single payment amount will be 50/50 blended reimbursement rates based on an average of the pre-competitive bidding reimbursement rates and the current average reimbursement rates to account for higher servicing costs in these areas. In 2019, this rate was \$134.71 a month for E1390 and \$44.32 a month for E1392, and this rate increased by 1.5% effective January 1, 2020 to \$136.71 a month for E1390 and \$44.93 a month for E1392. We estimate that approximately 15% of our patients are eligible to receive the higher reimbursement rates based on the geographic locations of our current patient population.

Cumulatively in previous rounds of competitive bidding, we were offered contracts for a substantial majority of the CBAs and product categories for which we submitted bids. As of January 1, 2017, we believe we had access to over 90% of the Medicare oxygen therapy market based on our analysis of the 103 CBAs that we won out of the 130 total CBAs. These 130 CBAs represented approximately 36% of the Medicare market with the remaining approximately 64% of the market not subject to competitive bidding per Medicare’s data on 2018 traditional Medicare fee-for-service beneficiaries in CBAs as compared to the total Medicare fee-for-service beneficiaries. As of January 1, 2019, we can choose to accept Medicare oxygen patients throughout the United States. As of July 2018, we are operating in all 50 states in the U.S. We did not sell or rent to patients in Hawaii due to the licensure requirements from inception to June 2018.

We cannot guarantee that we will be offered contracts in subsequent rounds of competitive bidding. In all five rounds of competitive bidding in which we have participated, we have gained access to certain CBAs and been excluded from other CBAs.

Medicare revenue, including patient co-insurance and deductible obligations, represented 4.8% of our total revenue in the year ended December 31, 2019.

Medicare reimbursement for oxygen rental equipment is limited to a maximum of 36 months within a 60-month service period, and the equipment remains the property of the home oxygen supplier. The supplier that billed Medicare for the 36th month of service continues to be responsible for the patient's oxygen therapy needs for months 37 through 60, and there is generally no additional reimbursement for oxygen generating portable equipment for these later months. Medicare does not separately reimburse suppliers for oxygen tubing, cannulas and supplies that may be required for the patient. The supplier is required to keep the equipment provided in working order and in some cases, Medicare will reimburse for repair costs. At the end of the five-year useful life of the equipment, the patient may request replacement equipment and, if he or she can be re-qualified for the Medicare benefit, a new maximum 36-month payment cycle out of the next 60 months of service would begin. The supplier may not arbitrarily issue new equipment. We have analyzed the potential impact to revenue associated with patients in the capped rental period and have deferred \$0 associated with the capped rental period for the years ended December 31, 2019 and December 31, 2018. Our capped patients as a percentage of total patients on service was approximately 20.3% as of December 31, 2019, which was slightly higher than the capped patients as a percentage of total patients on service of approximately 19.1% as of December 31, 2018. The percentage of capped patients may fluctuate over time as new patients come on service, patients come off of service before and during the capped rental period, and existing patients enter the capped rental period.

Our obligations to service Medicare patients over the rental period include supplying working equipment that meets each patient's oxygen needs pursuant to his/her doctor's prescription and certificate of medical necessity form and supplying all disposables required for the patient to operate the equipment, including cannulas, filters, replacement batteries, carts and carry bags, as needed. If the equipment malfunctions, we must repair or replace the equipment. We determine what equipment the patient receives, as long as that equipment meets the physician's prescription, and we can deploy used assets in working order as long as the prescription requirements are met. We must also procure a recertification of the certificate of medical necessity from the patient's doctor to confirm the patient's need for continued oxygen therapy one year after the patient first receives oxygen therapy and one year after each new 36-month reimbursement period begins. The patient can choose to receive oxygen supplies and services from another supplier at any time, but the supplier may only transition the patient to another supplier in certain circumstances.

Round 2021 of the competitive bidding program includes non-invasive ventilation (NIV) as a new product category effective January 1, 2021 for HCPCS code E0466. Average Medicare reimbursement rates for HCPCS code E0466 were a monthly, non-capped rental with rates of \$1,042.26 a month in 2019, and increased 0.9% effective January 1, 2020 to \$1,051.64 a month, excluding Puerto Rico where the monthly Medicare reimbursement rate for E0466 was \$1,827.24 per month in 2019 and increased to \$1,843.69 a month effective January 1, 2020. Since this is the first-time non-invasive ventilators are being included in the competitive bidding program, it is uncertain what impact bidding will have on the reimbursement rates. If there is a significant decline in reimbursement rates or changes in coverage criteria, this may negatively impact the adoption of the Tidal Assist® Ventilator (TAV®) product by home medical equipment providers, or increase pricing pressure, as well as negatively impact our rental reimbursement rates, which would adversely affect our business, financial condition and results of operations.

It is also uncertain if we will win any bids for NIV for Round 2021 of the competitive bidding program. We have not previously provided NIV products to Medicare beneficiaries. If we do not win contracts to service Medicare beneficiaries for NIV in Round 2021, that may limit our ability to grow rental revenue for NIV.

It is also uncertain if the current TAV product acquired from New Aera, will be reimbursable in its current configuration under HCPCS code E0466. We requested confirmation on the assigned HCPCS codes for the TAV system from the Pricing, Data Analysis, and Coding Contractor in August 2019 following the closing of the New Aera transaction. In August 2019, we received positive confirmation that this product was assigned HCPCS code E0466. However, in September 2019, we received a revised communication that the product was assigned HCPCS code E1390 and E1352, which was then revoked at our request in December 2019. In September 2019, we appealed to the Centers for Medicare and Medicaid Services, and in January 2020 our appeal was denied. We are currently pursuing additional appeal opportunities. If we do not receive revised coding, it could limit this product's adoption by home medical equipment providers and also our direct rentals.

As of December 31, 2019, we had 91 contracts with Medicaid, Medicare Advantage, government and private payors. These contracts qualify us as an in-network provider for these payors. As a result, patients can rent or purchase our systems at the same patient obligation as other in-network oxygen suppliers. Based on our patient population, we believe at least 44% of all oxygen therapy patients are covered by Medicare Advantage, government, and other private payors. Private payors typically provide reimbursement at a rate similar to Medicare allowables for in-network plans. We anticipate that private payor reimbursement levels will generally be reset in accordance with Medicare payment amounts.

We believe that we are well positioned to respond to the changing reimbursement environment because our product offerings are innovative, patient-focused and cost-effective. We have historically been able to reduce our costs through scalable manufacturing, better sourcing, continuous innovation, and reliability improvements, as well as innovations that reduce our product service costs by minimizing exchanges. As a result of design changes, supplier negotiations, bringing manufacturing and assembly largely in-house

and our commitment to driving efficient manufacturing processes, we have reduced our overallPOC system cost by approximately 59% from 2009 to 2019. We intend to continue to seek ways to reduce our cost of revenue through manufacturing and design improvements.

For additional discussion of the impact of the recent Medicare reimbursement proposals, see “Risk Factors” herein.

Manufacturing and raw materials

We have been developing and refining the manufacturing of our Inogen One systems since 2004. While nearly all of our manufacturing and assembly processes were originally outsourced, assembly of the compressors, sieve beds, concentrators and certain manifolds were brought in-house in order to improve quality control and reduce cost. In support of our European sales, we established a physical presence in Europe by acquiring our former distributor, MedSupport, on May 4, 2017 and began production of our Inogen One G3 concentrators in the fourth quarter of 2017 using a contract manufacturer located in the Czech Republic to improve our ability to service our European customers. We began manufacturing the Inogen One G5 at our contract manufacturer in the first quarter of 2020. We expect to maintain our assembly operations for our Inogen One concentrators, Inogen At Home concentrators, and Inogen Tidal Assist Ventilators at our facilities in Richardson, Texas and Goleta, California.

We also use lean manufacturing practices to maximize manufacturing efficiency. We rely on third-party manufacturers to supply several components of our products. We typically enter into supply agreements for these components that specify quantity and quality requirements and delivery terms. In certain cases, these agreements can be terminated by either party upon relatively short notice. We have elected to source certain key components from single sources of supply, including our batteries, motors, valves, columns, and some molded plastic components. We believe that maintaining a single source of supply allows us to control production costs and inventory levels and to manage component quality. In order to mitigate against the risks related to a single source of supply, for certain components we qualify alternative suppliers and develop contingency plans for responding to disruptions. However, any reduction or halt in supply from one of these single-source suppliers could limit our ability to manufacture our products or devices until a replacement supplier is found and qualified. For additional discussion of potential risks related to our manufacturing and raw materials, please see the risk factor entitled *“We obtain some of the components, subassemblies and completed products included in our products from a single source or a limited group of manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays, an inability to meet customer demand, substantial loss in revenue, and an adverse effect on our financial condition and results of operations.”*

We currently manufacture in two leased buildings in Richardson, Texas and Goleta, California, that we have registered with the Food and Drug Administration (FDA), and maintain a Quality Management system for which we have obtained International Standards Organization (ISO) 13485 certification. We have leases commencing in 2020 for a new building in Goleta, California which we will have to register with the FDA and will replace our existing leased building in Goleta, California, and a new building in Plano, Texas which we will have to register with the FDA and will replace our existing leased building in Richardson, Texas. We believe we and our manufacturing partner have sufficient capacity to meet anticipated demand.

Our entire organization is responsible for quality management. Our Quality Assurance and Regulatory Affairs departments oversee this by tracking component, device and organization performance and by training team members outside the Quality Assurance and Regulatory Affairs departments to become competent users of our Quality Management system. By measuring component performance, communicating daily with the production group and our suppliers, and reviewing customer complaints, our Quality Assurance department, through the use of our corrective action program, drives and documents continuous performance improvement of our suppliers and internal departments. Our Regulatory Affairs department also trains internal quality auditors to audit our adherence to the Quality Management system. Our Quality Management system has been certified to ISO 13485:2016 by BSI, a Notified Body.

In 2018 and 2019, our contract manufacturer produced the vast majority of the Inogen One G3 concentrators required to support our European demand and we expect this to continue in 2020, and we also began manufacturing the Inogen One G5 at our contract manufacturer in January 2020. This has allowed us to continue to expand our manufacturing capacity and redirect our U.S. manufacturing activities to focus on growth in the U.S. and on our latest product, the Inogen One G5.

As of December 31, 2019, we had 297 employees in operations, manufacturing, quality assurance, manufacturing engineering and repair in the United States.

Research and development

We are committed to ongoing research and development to stay at the forefront of patient preference in the oxygen concentrator and non-invasive ventilation field. As of December 31, 2019, our research and development staff included 26 engineers and scientists with expertise in air separation, compressors, pneumatics, electronics, embedded software, mechanical design, sensor, automation, connectivity, non-invasive ventilation and manufacturing automation. Our current research and development efforts are focused primarily on increasing functionality, improving design for ease-of-use, and reducing production costs of our Inogen One systems and Inogen At Home systems, as well as developing our next-generation oxygen concentrators and non-invasive ventilators. We have leveraged our forty-six issued patents while also reducing the overall POC system cost by approximately 59% from 2009 to 2019.

We have released six products since 2004, including our Inogen One G1 in October 2004, our Inogen One G2 in March 2010, our Inogen One G3 in September 2012, our Inogen At Home system in October 2014, our Inogen One G4 in May 2016, and our Inogen One G5 in April 2019. We also launched the Inogen Connect platform in December 2018 in our direct-to-consumer channel and in February 2019 in our domestic business-to-business channel. We launched our Tidal Assist Ventilator in December 2019. Our dedication to continuous improvement has also resulted in five mid-cycle product updates and numerous incremental improvements. Development projects utilize a combination of rapid prototyping and accelerated life testing methods to ensure products are taken from concept to commercialization in a fast and capital efficient manner. We leverage our direct patient expertise to rapidly gain insight from end users and to identify areas of innovation that we believe will lead to higher-quality products and lower total cost of ownership for our products.

We continue to focus our efforts on design and functionality improvements that enhance patient quality of life and reduce service costs.

Competition

The respiratory therapy market is a highly competitive industry. We compete with a number of manufacturers and distributors of portable oxygen concentrators, as well as providers of other long-term oxygen therapy solutions such as home delivery of oxygen tanks or cylinders, stationary concentrators, transfilling concentrators, and liquid oxygen.

Our significant manufacturing competitors are Respironics (a subsidiary of Koninklijke Philips N.V.), Invacare Corporation, Caire Medical (subsidiary of NGK Spark Plug), DeVilbiss Healthcare (a subsidiary of Drive Medical), O2 Concepts, Precision Medical, Resmed, Gas Control Equipment (subsidiary of Colfax), Breathe Technologies, Inc. (recently announced to be acquired by Hill-Rom Holdings, Inc.), Breas Medical, Ventec Life Systems, Covidien, and Nidek Medical. Additional competitors have also pre-announced upcoming product launches of portable oxygen concentrators expected in 2020 including 3B Medical, SysMed and Bellascura. Given the relatively low barriers to entry in the oxygen therapy and non-invasive ventilator device manufacturing markets, we expect that the industry will become increasingly competitive in the future. For example, some major manufacturing competitors have implemented direct-to-consumer sales models which may increase their competitiveness and sales to patients; however, these strategies are limited to direct-to-consumer sales and do not include direct-to-consumer rentals where they would be required to meet national accreditation and state-by-state licensing requirements, secure Medicare billing privileges, and compete directly with the home medical equipment providers that many rely on across their entire homecare businesses. Manufacturing companies compete for sales to providers primarily on the basis of price, quality/reliability, financing, bundling, product features, and service. We believe that we compete favorably with respect to these factors, due to our manufacturing competitors' reliance on home medical equipment distribution, which compresses their margins and limits their ability to invest in product features that address consumer preferences.

For many years, Lincare, Inc. (a subsidiary of the Linde Group), Apria Healthcare, Inc., AdaptHealth Corp., Aerocare Holdings, Inc., and Rotech Healthcare, Inc. have been among the market leaders in providing respiratory therapy products, while the remaining market is serviced by regional or local providers. Because of reimbursement reductions, we expect more industry consolidation and volatility in ordering patterns based on how providers are restructuring their businesses and their access to capital. Respiratory therapy providers compete primarily on the basis of product features and service, rather than price, since reimbursement levels are established by Medicare and Medicaid, or by the individual determinations of private payors.

Some of our competitors are large, well-capitalized companies with significantly greater resources than we have. As a consequence, they are able to spend more aggressively on product development, marketing, sales and other product initiatives than we can. Some of these competitors have:

- significantly greater name recognition;
- established relationships with healthcare professionals, customers and third-party payors;
- established distribution networks;

- additional lines of products, and the ability to offer rebates or bundle products to offer higher discounts lower pricing, longer warranties, financing or extended terms, or other incentives to gain a competitive advantage;
- greater history in conducting research and development, manufacturing, marketing and obtaining regulatory approval for oxygen and non-invasive ventilation products; and
- greater financial and human resources for product development, sales and marketing, patent litigation and customer financing.

As a result, our competitors may be able to respond more quickly and effectively than we can to new or changing opportunities, technologies, standards or customer requirements. In light of these advantages that our competitors maintain, even if our technology and direct-to-consumer distribution strategy is more effective than the technology and distribution strategy of our competitors, current or potential customers might accept competitor products and services in lieu of purchasing our products. We anticipate that we will face increased competition in the future as existing companies and competitors develop new or improved products and distribution strategies and as new companies enter the market with new technologies and distribution strategies. We may not be able to compete effectively against these organizations. Our ability to compete successfully and to increase our market share is dependent upon our reputation for providing high-quality, light weight, and state-of-the-art products with responsive and professional services to achieve strong customer satisfaction. Increased competition in the future could adversely affect our revenue, revenue growth rate, margins and market share.

Government regulation

Inogen One systems, Inogen At Home systems, Inogen Tidal Assist Ventilator, and related accessories are medical devices subject to extensive and ongoing regulation by the FDA, as well as other federal and state regulatory bodies in the United States and comparable authorities in other countries. The FDA regulations govern the following activities that we perform, or that are performed on our behalf, to ensure that medical products distributed domestically or exported internationally are safe and effective for their intended uses: product design and development, pre-clinical and clinical testing, manufacturing, labeling, storage, pre-market clearance or approval, record keeping, product marketing, advertising and promotion, sales and distribution, and post-marketing surveillance.

FDA's pre-market clearance and approval requirements

Unless an exemption applies, each medical device we seek to commercially distribute in the United States will require either a prior Section 510(k) of the Food, Drug and Cosmetic Act, or 501(k) clearance or a pre-market approval from the FDA. Medical devices are classified into one of three classes—Class I, Class II or Class III—depending on the degree of risk associated with each medical device and the extent of control needed to ensure safety and effectiveness. Devices deemed to pose lower risks are placed in either Class I or II, which requires the manufacturer to submit to the FDA a premarket notification requesting permission to commercially distribute the device. This process is generally known as 510(k) clearance. Some low risk devices are exempted from this requirement. Devices deemed by the FDA to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices, or devices deemed not substantially equivalent to a previously cleared 510(k) device, are placed in Class III, requiring premarket approval.

510(k) clearance pathway

When a 510(k) clearance is required, we must submit a premarket notification to the FDA demonstrating that our proposed device is substantially equivalent to a previously cleared and legally marketed 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 a pre-market approval application. The performance goal for FDA to make a decision is within 90 FDA Days (calculated as the number of calendar days between the date the 510(k) was “accepted” by the FDA for substantive review and date of a decision, excluding the days the submission was on hold for an Additional Information request). As a practical matter, clearance often takes significantly longer. The FDA must “accept” the submission for substantive review and may require further information, including clinical data, to make a determination regarding substantial equivalence. If the FDA determines that the device, or its intended use, is not substantially equivalent to a previously-cleared device or use, the FDA will either allow the submission of a de novo application, which is a request to down classify the device from Class III to Class II, or place the device, or the particular use, into Class III. We obtained 510(k) clearance for the original Inogen One system on May 13, 2004. We market the Inogen One G3 and Inogen One G4 systems pursuant to the original Inogen One 510(k) clearance. We obtained 510(k) clearance for the Inogen At Home system on June 20, 2014. New Aera obtained 510(k) clearance for the Tidal Assist Ventilator on December 2, 2016.

Pre-market approval pathway

A pre-market approval application must be submitted to the FDA if the device cannot be cleared through the 510(k) or de novo process. The pre-market approval application process is much more demanding than the 510(k) premarket notification process. A pre-market approval application must be supported by extensive data, including but not limited to technical, preclinical, clinical trials, manufacturing and labeling to demonstrate to the FDA's satisfaction reasonable evidence of safety and effectiveness of the device.

After a pre-market approval application is submitted and the FDA determines that the application is sufficiently complete to permit a substantive review, the FDA will accept the application for review. The FDA has 180 days to review an "accepted" pre-market approval application, although the review of an application generally occurs over a significantly longer period of time and can take up to several years. During this review period, the FDA may request additional information or clarification of the information already provided. Also, an advisory panel of experts from outside the FDA may be convened to review and evaluate the application and provide recommendations to the FDA as to the approvability of the device. In addition, the FDA will conduct a preapproval inspection of the manufacturing facility to ensure compliance with quality system regulations.

Clinical trials

Clinical trials are almost always required to support pre-market approval and are sometimes required for 510(k) clearance. In the United States, these trials generally require submission of an application for an Investigational Device Exemption, or IDE, to the FDA. The IDE application must be supported by appropriate data, such as animal and laboratory testing results, showing it is safe to test the device in humans and that the testing protocol is scientifically sound. The IDE must be approved in advance by the FDA for a specific number of patients unless the product is deemed a non-significant risk device eligible for more abbreviated IDE requirements. Clinical trials for significant risk devices may not begin until the IDE application is approved by the FDA and the appropriate institutional review boards, or IRBs, at the clinical trial sites. We, the FDA or the IRB at each site at which a clinical trial is being performed may suspend a clinical trial at any time for various reasons, including a belief that the risks to study subjects outweigh the benefits. Even if a trial is completed, the results of clinical testing may not demonstrate the safety and efficacy of the device, may be equivocal or may otherwise not be sufficient to obtain approval or clearance of the product.

Pervasive and ongoing regulation by the FDA and foreign agencies

Even after a device receives clearance or approval and is placed on the market, numerous regulatory requirements apply. These include:

- establishment registration and device listing;
- quality system regulation, which requires manufacturers, including third-party manufacturers, to follow stringent design, testing, control, documentation and other quality assurance procedures during all aspects of the manufacturing process;
- labeling regulations and the FDA prohibitions against the promotion of products for un-cleared, unapproved or "off-label" uses, and other requirements related to promotional activities;
- medical device reporting regulations, which require that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if the malfunction were to recur;
- corrections and removals reporting regulations, which require that manufacturers report to the FDA field corrections and product recalls or removals if undertaken to reduce a risk to health posed by the device or to remedy a violation of the Federal Food, Drug and Cosmetic Act that may present a risk to health; and
- post-market surveillance regulations, which apply when necessary to protect the public health or to provide additional safety and effectiveness data for the device.

After a device receives 510(k) clearance, de novo clearance or a pre-market approval, any modification that could significantly affect its safety or effectiveness, or that would constitute a major change in its intended use, will require a new clearance or approval. The FDA requires each manufacturer to make this determination initially, but the FDA can review any such decision and can disagree with a manufacturer's determination. We have modified various aspects of our Inogen One systems since receiving regulatory clearance, but we believe that new 510(k) clearances are not required for these modifications. If the FDA disagrees with our determination not to seek a new 510(k) clearance, the FDA may retroactively require us to seek 510(k) clearance or pre-market approval. The FDA could also require us to cease marketing and distribution and/or recall the modified device until 510(k) clearance or pre-market approval is obtained. Also, in these circumstances, we may be subject to significant regulatory fines and penalties.

Failure to comply with applicable regulatory requirements can result in enforcement action by the FDA, which may include any of the following sanctions: warning letters, fines, injunctions, civil or criminal penalties, recall or seizure of our products, operating

restrictions, partial suspension or total shutdown of production, refusing our request for 510(k) clearance or pre-market approval of new products, rescinding previously granted 510(k) clearances or withdrawing previously granted pre-market approvals.

As a medical device manufacturer, our manufacturing facilities are subject to periodic inspection by the FDA and certain corresponding regulatory agencies and authorities. We have been audited six times since April 2012 by the FDA and found to be in substantial compliance with Good Manufacturing Practices. We have completed six surveillance audits and two recertification audits by our notified body over the same period and identified minor non-conformances, all of which were addressed. In addition, two transfer audits (one combined with a surveillance audit tallied above and one standalone), one unannounced visit, one Medical Device Single Audit Program (MDSAP) upgrade audit, one initial extension of scope audit for Inogen Europe B.V. and one site addition audit were also completed.

International sales of medical devices are subject to foreign government regulations and registration, which may vary substantially from country to country. The time required to obtain approval by a foreign country may be longer or shorter than that required for FDA approval, and the requirements may differ. There is a trend towards harmonization of quality system standards among the European Union, United States, Canada and various other industrialized countries.

Licensure, registrations, and accreditation

In April 2009, we became an accredited Durable Medical Equipment, Prosthetics, Orthotics, and Supplies Medicare supplier by the Accreditation Commission for Health Care for our Goleta, California facility for Home/Durable Medical Equipment Services for oxygen equipment and supplies. Our Medicare accreditation must be renewed every three years by passing an on-site inspection. Our current accreditation with Medicare is due to expire in May 2021. Several states require that durable medical equipment providers be licensed in order to sell products to patients in that state. Certain of these states require that durable medical equipment providers maintain an in-state location. Most of our state licenses are renewed on an annual or bi-annual basis. Although we believe we are in compliance with all applicable state regulations regarding licensure requirements, if we were found to be non-compliant, we could lose our licensure in that state, which could prohibit us from selling our current or future products to patients in that state. Loss of any state licensure or operating without a required state license may also impact our Medicare enrollment, which requires us to be properly licensed in every state where we are registered with Medicare to do business. Loss or reprimand of our Medicare enrollment may also affect any Medicare competitive bidding program contracts we may apply for in the future. In addition, we are subject to certain state laws regarding professional licensure. We believe that our certified clinicians are in compliance with all such state laws. If our clinicians were to be found non-compliant in a given state, we would need to modify our approach to providing education, clinical support and customer service in such state.

Federal anti-kickback and self-referral laws

The Federal Anti-Kickback Statute prohibits the knowing and willful offer, payment, solicitation or receipt of any form of remuneration overtly or covertly, in cash or in kind, in return for, or to induce the:

- referral of an individual to a person for the furnishing or arranging for the furnishing of items or services reimbursable under Medicare, Medicaid or other federal healthcare programs; or
- purchase, lease, or order of, or the arrangement or recommendation of the purchasing, leasing, or ordering of any good facility, item or service reimbursable under Medicare, Medicaid or other federal healthcare programs.

The Federal Anti-Kickback Statute applies to our arrangements with our United States sales representatives, customers and healthcare providers. Although we believe that we have structured such arrangements to be in compliance with the Anti-Kickback Statute and other applicable laws, regulatory authorities may determine otherwise. Non-compliance with the Federal Anti-Kickback Statute can result in cancellation of our provider numbers and exclusion from Medicare, Medicaid or other federal healthcare programs, restrictions on our ability to operate in certain jurisdictions, as well as civil and criminal penalties, any of which could have an adverse effect on our business and results of operations.

Federal law also includes the Physician Self-Referral Law, commonly known as the “Stark Law,” which prohibits a physician from referring a patient to an entity with which the physician (or an immediate family member) has a financial relationship, for the furnishing of certain designated health services for which payment may be made by Medicare, unless an exception applies. Violation of the Stark Law could result in denial of payment, disgorgement of reimbursements received under a non-compliant arrangement, civil penalties and fees, and exclusion from Medicare, Medicaid or other federal healthcare programs. Although we believe that we have structured our provider arrangements to comply with current Stark Law requirements, regulatory authorities may determine otherwise.

Additionally, as some of these laws are still evolving, we lack definitive guidance as to the application of certain key aspects of these laws. We cannot predict the final form that these regulations will take or the effect that the final regulations will have on us. As a result, our arrangements may ultimately be found to be not in compliance with applicable federal law.

Federal False Claims Act

The Federal False Claims Act provides, in part, that the federal government may bring a lawsuit against any person whom it believes has knowingly presented, or caused to be presented, a false or fraudulent request for payment to the federal government, or who has made a false statement or used a false record to get a claim approved. In addition, amendments in 1986 to the Federal False Claims Act have made it easier for private parties to bring “qui tam” or whistleblower lawsuits against companies. Although we believe that we are in compliance with the federal government’s laws and regulations, if we are found in violation of these laws, penalties of up to \$0.022 million for each false claim, plus three times the amount of damages that the federal government sustained because of the act, can be assessed.

Civil monetary penalties law

The Federal Civil Monetary Penalties Law grants authority to the U.S. Department of Health & Human Services Office of Inspector General (OIG) to seek civil monetary penalties (CMPs) against an individual or entity based on a wide variety of conduct including violations of the Anti-Kickback Statute, Stark Law, and False Claims Act. An entity that offers to or transfers remuneration to any individual eligible for benefits under Medicare or Medicaid that such entity knows or should know is likely to influence such individual to order or receive from a particular provider, practitioner, or supplier any Medicare or Medicaid payable item or service may be liable for CMPs. We sometimes offer customers various discounts and other financial incentives in connection with the sales of our products. While it is our intent to comply with all applicable laws, the federal government may find that our marketing activities violate the law. If we are found to be in non-compliance, we could be subject to CMPs of up to \$0.022 million for each wrongful act, assessment of three times the amount claimed for each item or service and exclusion from Medicare, Medicaid and other federal healthcare programs. In addition, to the extent we are found to not be in compliance, we may be required to curtail or restructure our operations. Any penalties, damages, fines, exclusions, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results.

State fraud and abuse provisions

Many states have also adopted some form of anti-kickback and self-referral laws and false claims act that may apply to all payors. We believe that we are in compliance with such laws. Nevertheless, a determination of liability under such laws could result in fines and penalties and restrictions on our ability to operate in these jurisdictions.

HIPAA

The Health Insurance Portability and Accountability Act of 1996, or HIPAA, established uniform standards governing the conduct of certain electronic healthcare transactions and protecting the security and privacy of individually identifiable health information maintained or transmitted by healthcare providers, health plans and healthcare clearinghouses, which are referred to as “covered entities.” Three standards have been promulgated under HIPAA’s regulations: the Standards for Privacy of Individually Identifiable Health Information, which restrict the use and disclosure of certain individually identifiable health information, the Standards for Electronic Transactions, which establish standards for common healthcare transactions, such as claims information, plan eligibility, payment information and the use of electronic signatures, and the Security Standards, which require covered entities to

implement and maintain certain security measures to safeguard certain electronic health information, including the adoption of administrative, physical and technical safeguards to protect such information.

In 2009, Congress passed the American Recovery and Reinvestment Act of 2009, or ARRA, which included sweeping changes to HIPAA, including an expansion of HIPAA's privacy and security standards. ARRA includes the Health Information Technology for Economic and Clinical Health, or HITECH, which, among other things, made HIPAA's privacy and security standards directly applicable to business associates of covered entities effective February 17, 2010. A business associate is a person or entity that performs certain functions or activities on behalf of a covered entity that involve the use or disclosure of protected health information in connection with recognized healthcare operations activities. As a result, business associates are now subject to significant civil and criminal penalties for failure to comply with applicable standards. Moreover, HITECH creates a new requirement to report certain breaches of unsecured, individually identifiable health information and imposes penalties on entities that fail to do so. HITECH also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney fees and costs associated with pursuing federal civil actions. The 2013 final HITECH omnibus rule modifies the breach reporting standard in a manner that will likely make more data security incidents qualify as reportable breaches.

In addition to federal regulations issued under HIPAA, some states have enacted privacy and security statutes or regulations that, in some cases, are more stringent than those issued under HIPAA. In those cases, it may be necessary to modify our planned operations and procedures to comply with the more stringent state laws. If we fail to comply with applicable state laws and regulations, we could be subject to additional sanctions. Any liability from failure to comply with the requirements of HIPAA, HITECH or state privacy and security statutes or regulations could adversely affect our financial condition. The costs of complying with privacy and security related legal and regulatory requirements are burdensome and could have a material adverse effect on our results or operations.

Patient Protection and Affordable Care Act

In addition, there has been a recent trend of increased federal and state regulation of payments made to physicians and other healthcare providers. The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, among other things, imposed new public reporting requirements on medical device manufacturers for payments or other transfers of value made by them to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their immediate family members. Failure to submit required ownership and investment interest information may result in civil monetary penalties of up to an aggregate of \$0.17 million per year (or up to an aggregate of \$1.128 million per year for "knowing failures"), for all payments, transfers of value or ownership or investment interests that are not timely, accurately and completely reported in an annual submission. Certain states also mandate implementation of commercial compliance programs, impose restrictions on device manufacturer marketing practices and/or require the tracking and reporting of gifts, compensation and other remuneration to physicians and other healthcare professionals.

The Patient Protection and Affordable Care Act also requires healthcare providers to voluntarily report and return an identified Medicare or Medicaid overpayment within 60 days after identifying the overpayment. Failure to repay the overpayment within 60 days will result in the claim being considered a "false claim" and the healthcare provider will be subject to False Claims Act liability, and additional CMPs of \$0.02 million for each item or service that is not reported and returned.

International regulation

International sales of medical devices are subject to foreign governmental regulations, which vary substantially from country to country. The time required to obtain clearance or approval by a foreign country may be longer or shorter than that required for FDA clearance or approval, and the requirements may be different.

The primary regulatory body in Europe is the European Commission, which has adopted numerous directives and has promulgated standards regulating the design, manufacture, clinical trials, labeling and adverse event reporting for medical devices. Devices that comply with the requirements of a relevant directive will be entitled to bear the European Conformity Marking, or CE Mark, indicating that the device conforms to the essential requirements of the applicable directives and, accordingly, can be commercially distributed throughout the member states of the European Union, and other countries that comply with or mirror these directives. The method of assessing conformity varies depending on the type and class of the product, but normally involves a combination of self-assessment by the manufacturer and a third-party assessment by a notified body, an independent and neutral institution appointed by a country to conduct the conformity assessment. This third-party assessment may consist of an audit of the manufacturer's quality system, review of technical documentation, and specific testing of the manufacturer's device. Such an assessment may be required in order for a manufacturer to commercially distribute the product throughout these countries. ISO 13485 certification is a voluntary standard. Quality systems that implement relevant harmonized standards establish the presumption of conformity with the essential requirements for a CE Mark. We have the authorization to affix the CE Mark to our oxygen therapy products and to commercialize our devices in the European Union. Our ISO 13485 certification was issued on April 21, 2005 and our EC-Certificate was issued on March 16, 2007. The final form of the European Medical Device Regulation, which will replace Europe's Medical Device Directive, entered into force on May 25, 2017 and its full application will be on May 26, 2020. The Medical Device Regulation will apply in parallel with the Medical Device Directive for a transition period of three years.

Inogen has sold products in Canada since 2006 when we obtained our Medical Device License after obtaining appropriate licensure, accreditation, and meeting ISO Standard 13485. As of January 1, 2019, Health Canada implemented the MDSAP as the sole mechanism for manufacturers to demonstrate compliance with the quality management system requirements of the Medical Device Regulations, replacing the Canadian Medical Devices Conformity Assessment System (CMDCAS) program. Inogen complies with MDSAP as of January 1, 2019.

In Australia, we must appoint an agent sponsor who will interact on our behalf with the Therapeutics Goods Administration (TGA). We must also prepare a technical file and declaration of conformity to essential requirements under Australian law, provide evidence of CE Marking of the device and submit this information via our agent sponsor to the TGA in a Medical Device Application. On June 4, 2007, we received our Certificate for Inclusion of a Medical Device in Australia.

U.S. Foreign Corrupt Practices Act

Also, the U.S. Foreign Corrupt Practices Act and similar worldwide anti-bribery laws generally prohibit companies and their intermediaries from making improper payments to foreign officials. We cannot assure you that our internal control policies and procedures will protect us from reckless or negligent acts committed by our employees, manufacturers, distributors, partners, collaborators or agents. Violations of these laws, or allegations of such violations, could result in legal fees, fines, penalties or prosecution and have a negative impact on our business, results of operations and reputation.

Intellectual property

We believe that to maintain a competitive advantage, we must develop and preserve the proprietary aspect of our technologies. We rely on a combination of patent, trademark, trade secret and other intellectual property laws, non-disclosure agreements and other measures to protect our proprietary rights. Currently, we require our employees, public accountants, consultants and advisors to execute non-disclosure agreements in connection with their employment, consulting or advisory relationships with us, where appropriate. We also require our employees, consultants and advisors with whom we expect to work on our current or future products to agree to disclose and assign to us all inventions conceived during the work day, developed using our property or related to our business. Despite any measures taken to protect our intellectual property, unauthorized parties may attempt to copy aspects of our Inogen One, Inogen At Home, or non-invasive ventilation systems, sell counterfeit versions of our products, or obtain and use information that we regard as proprietary.

Patents

As of December 31, 2019, we had twenty-eight pending patent applications and forty-six issued patents relating to the design and construction of our respiratory devices. We anticipate it could take several years for the most recent of these patent applications to result in issued patents, if successful.

The 2019 acquisition of New Aera added a significant number of issued and pending patent applications to Inogen's portfolio. The additional patents and patent filings include U.S. and international pending and issued patents. The combined portfolio of Inogen and New Aera include several categories.

Our patent portfolio contains four principal categories of patents and patent applications. One such category includes patents and patent applications directed to system and component designs that may be incorporated into Inogen's oxygen therapy product line which includes the Inogen One G3, Inogen One G4, Inogen One G5, and the Inogen At Home oxygen concentrators. For example, U.S. patent 9,592,360 is directed to the Inogen One G3 design, while U.S. patent 9,283,346 is directed towards the Inogen at Home stationary oxygen concentrator. This category of patents expires in 2031 or later and may serve to deter competitors from reverse engineering or copying our design elements.

The second category of patents and patent applications within our portfolio pertains to operating features and design techniques. For example, U.S. patents 8,702,841; 9,220,864; and 9,283,346 are directed towards design features of the Inogen One G3, Inogen One G4, and Inogen at Home products. This category of patents expires in 2031 or later (without taking into account any patent term adjustments). These features and designs are developed to facilitate the design, manufacturing, and usefulness of our products. These patents may prevent competitors from achieving the same levels of optimization as found in our products.

A third category of patents and patent applications relates to system designs that may be directed to products in both oxygen and ventilation product categories. One example of a patent in this category is U.S. patent 9,907,926, which is directed to an oxygen concentrator for mechanical ventilation. This category of patents expires in 2023 or later (without taking into account any patent term adjustments). Patents and patent applications in this category and others may facilitate the design and development of future respiratory products that can serve patients in need of supplemental oxygen and or mechanical ventilation therapies.

The fourth category of patents and patent applications is directed to the Tidal Assist Ventilator and related products. For example, U.S. patent 10,384,028 is directed to the nasal interface of the Tidal Assist Ventilator. Another example of a patent in this category is U.S. patent D851,767 which is directed to the design of the Tidal Assist Ventilator. This category of patents expires in 2034 or later.

Trademarks

"Inogen," "Inogen One," "Inogen One G2," "Inogen One G3," "G4," "G5," "Oxygenation," "Live Life in Moments, not Minutes," "Never Run Out of Oxygen," "Oxygen Therapy on Your Terms," "Oxygen.Anytime.Anywhere," "Reclaim Your Independence," "Intelligent Delivery Technology," "Inogen At Home," the Inogen design, "TIDAL ASSIST," "TAV," and "SIDEKICK" are registered trademarks with the United States Patent and Trademark Office of Inogen, Inc. We own pending applications for "Inogen," "MOMENTUM TRANSFER" and "SONIC BLADE" with the United States Patent and Trademark Office. We own trademark registrations for the mark "Inogen" in Australia, Canada, South Korea, Mexico, Europe (European Union Registration), Iceland, India, Israel, Japan, New Zealand, Norway, Peru, Turkey, Singapore, and Switzerland. We own pending applications for the mark "Inogen" in Argentina, Brazil, Chile, China, Columbia, Ecuador, Kuwait, Malaysia, Paraguay, South Africa and Uruguay. We own a trademark registration for the mark "イノジェン" in Japan. We own trademark applications for the marks "印诺真" and "艾诺根" in China. We own trademark registrations for the mark "Inogen One" in Australia, Canada, China, South Korea, Mexico, and Europe (European Union Registration). We own a trademark registration for the mark "Satellite Conserver" in Canada. We own a trademark registration for the mark "Inogen At Home" in Europe (European Union Registration). We own trademark registrations for the mark "G4" in Europe (European Union Registration) and the United Kingdom. We own trademark registrations for the mark "G5" in Europe (European Union Registration) and the United Kingdom. We own trademark applications for the Inogen design in Bolivia and China. Other service marks, trademarks, and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

Employees

As of December 31, 2019, we had 1,020 full and part-time employees worldwide, representing 526 in sales, marketing, clinical and client services, 301 in operations, manufacturing, quality assurance, manufacturing engineering, and repair, 167 in general administration and 26 in research and development. None of our employees are represented by a collective bargaining agreement. We believe that our employee relations are good.

Environmental matters

Our research and development and manufacturing processes involve the controlled use of hazardous materials, including flammables, toxics, and corrosives. Our research and manufacturing operations produce hazardous chemical waste products. We seek to comply with applicable laws regarding the handling and disposal of such materials. Given the small volume of such materials used or generated at our facilities, we do not expect our compliance efforts to have a material effect on our capital expenditures, earnings, and competitive position. However, we cannot eliminate the risk of accidental contamination or discharge and any resultant injury from these materials. We do not currently maintain separate environmental liability coverage and any such contamination or discharge could result in significant cost to us in penalties, damages, and suspension of our operations.

Backlog

We run our operations on a just-in-time basis; however, the volatility of order intake may result in periods when incoming orders exceed our capacity. We do not currently have a backlog of orders that could not be fulfilled in our ordinary course of business. Further, our customers can change or cancel orders with limited or no penalty and limited advance notice prior to shipment.

Geographic information

During the years ended December 31, 2019, 2018, and 2017, substantially all of our long-lived assets were located within the United States. See Note 2o our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K for additional information related to our U.S. and non-U.S. revenue.

Seasonality

We believe our sales may be impacted by seasonal factors. For example, we typically experience higher total sales in the second and third quarters, as a result of consumers traveling and vacationing during warmer weather in the spring and summer months, but this may vary year-over-year. As more home medical equipment (HME) providers adopt portable oxygen concentrators in their businesses, we expect our historical seasonality in the domestic business-to-business channel could change as well, which was previously influenced mainly by consumer buying patterns. Direct-to-consumer sales seasonality may also be impacted by the number of sales representatives and the amount of marketing spend in each quarter. For the years ended December 31, 2019, 2018 and 2017, the sales revenue in the second quarter accounted for 28.1%, 27.4% and 25.7%, respectively, and the sales revenue in the third quarter accounted for 25.4%, 26.7% and 28.0%, respectively, of our total sales revenue.

Corporate and available information

We were incorporated in Delaware in November 2001. Our principal executive offices are located at 326 Bollay Drive, Goleta, California 93117. Our telephone number is (805) 562-0500. Our website address is www.inogen.com. We make available on our website, free of charge, our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and any amendments to those reports, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission, or SEC. Our SEC reports can be accessed through the investor relations page of our website located at <http://investor.inogen.com>. The SEC also maintains a website that contains our SEC filings. The address of the site is www.sec.gov.

We webcast our earnings calls and certain events we participate in or host with members of the investment community on our investor relations page of our website. In addition, we use our website <http://investor.inogen.com> as a means of disclosing information about our company, our products, our planned financial and other announcements, our attendance at upcoming investor conferences, and other matters. It is possible that the information we post on our website could be deemed material information. We may use our website to comply with our disclosure obligations under Regulation FD. Therefore, investors should monitor our website in addition to following our press releases, SEC filings, public conference calls, and webcasts. Corporate governance information, including our board committee charters, code of ethics, and corporate governance principles, is also available on our investor relations page of our website located at <http://investor.inogen.com>. The contents of our website are not incorporated by reference into this Annual Report on Form 10-K or in any other report or document we file with the SEC, and any references to our website are intended to be inactive textual references only.

Information about our executive officers

The following table identifies certain information about our executive officers as of February 21, 2020.

Name	Age	Position
Scott Wilkinson	55	Chief Executive Officer, President, and Director
Alison Bauerlein	38	Executive Vice President, Finance and Chief Financial Officer, Corporate Secretary and Corporate Treasurer
Bart Sanford	54	Executive Vice President, Operations
Brenton Taylor	38	Executive Vice President, Engineering
Byron Myers	40	Executive Vice President, Sales and Marketing

Scott Wilkinson has served as our President and Chief Executive Officer since March 1, 2017 and a director since January 1, 2017. Previously, Mr. Wilkinson served as our President and Chief Operating Officer from January 1, 2016 through February 28, 2017, Executive Vice President, Sales and Marketing from 2008 through December 31, 2015, and in this role oversaw Inogen's global operations in sales, marketing, customer service, product management, medical billing, and clinical services. Prior to that, Mr. Wilkinson served as our Director of Product Management from 2005 to 2006 and Vice President, Product Management from 2006 to 2008. From 2000 to 2005, Mr. Wilkinson worked for Invacare Corporation, a designer and manufacturer of oxygen products, as a Group Product Manager and helped launch their \$100 million oxygen product line segment. From 1999 to 2000, Mr. Wilkinson served as a Product Line Director with Johnson & Johnson, a healthcare company. From 1988 to 1999, Mr. Wilkinson worked as a Research Scientist, Product Manager, and Project Leader at Kimberly Clark, a consumer products company. Mr. Wilkinson received a Bachelor of Science degree in Chemical Engineering from the University of Akron and an MBA from University of Wisconsin, Oshkosh. The board of directors believes that Mr. Wilkinson's considerable knowledge and understanding of our business together with his extensive industry experience qualifies him to serve on the board.

Alison Bauerlein is a co-founder of Inogen and has served as our Chief Financial Officer since 2009 and Executive Vice President, Finance since March 2014. Ms. Bauerlein has also served as Corporate Secretary and Corporate Treasurer since 2002. Ms. Bauerlein previously served as our Vice President, Finance from 2008 until March 2014. Prior to serving in these positions, Ms. Bauerlein also served as Controller with our company from 2008 to 2009 and 2001 to 2004, and the Director of Financial Planning and Analysis from 2004 to 2008. Ms. Bauerlein has over 15 years' experience in treasury, finance, accounting, risk management as well as strategic and tactical cost analysis and forecasting. Ms. Bauerlein received a Bachelor of Arts degree in Economics/Mathematics with high honors from the University of California, Santa Barbara.

Bart Sanford has served as our Executive Vice President, Operations since September 2018. From April 2017 to September 2018, Mr. Sanford was Senior Vice President, Operations, at Cepheid Inc., a molecular diagnostics company. From October 2010 to March 2017, Mr. Sanford was Vice President, Global Operations, at Molecular Devices, LLC, a life sciences company. From January 2009 to September 2010, Mr. Sanford was a Corporate Director at Danaher Corporation, a medical device company. From March 2000 to December 2008, Mr. Sanford held various positions at Fluke Corporation, an industrial test product company, including plant manager, manufacturing manager and materials manager. Mr. Sanford received an MBA from Central Michigan University and a Bachelor of Arts degree in Logistics, Materials and Supply Chain Management from Michigan State University.

Brenton Taylor is a co-founder of Inogen and has served as our Executive Vice President, Engineering since March 2014. Prior to serving in this position, Mr. Taylor served as our Vice President, Engineering from 2008 until March 2014 and as the Director of Technology with our company from 2003 to 2008. Mr. Taylor is listed as an inventor on 29 of the Company's issued patents related to portable oxygen concentrator development. Mr. Taylor received a Bachelor of Science degree in Microbiology from the University of California, Santa Barbara.

Byron Myers is a co-founder of Inogen and has served as our Executive Vice President, Sales and Marketing since January 1, 2017. Previously, Mr. Myers served as our Vice President, Marketing from 2011 to 2016. In his current role, Mr. Myers leads Inogen's sales, marketing and product management operations. Prior to serving in these positions, Mr. Myers held various roles with our company, including: Product Manager from 2002 to 2006, Director of Marketing from 2006 to 2007 and 2008 to 2011, International Product Manager during 2007, and Director of International Product Management from 2007 to 2008. Mr. Myers received a Bachelor of Arts degree in Economics/Mathematics from the University of California, Santa Barbara and an MBA from the Rady School of Management at the University of California, San Diego.

ITEM 1A. RISK FACTORS

We operate in a rapidly changing environment that involves numerous uncertainties and risks. In addition to the other information included in this Annual Report on Form 10-K, the following risks and uncertainties may have a material and adverse effect on our business, financial condition, results of operations, or stock price. You should consider these risks and uncertainties carefully, together with all of the other information included or incorporated by reference in this Annual Report on Form 10-K. The risks and uncertainties described below may not be the only ones we face. If any of the risks or uncertainties we face were to occur, the trading price of our securities could decline, and you may lose all or part of your investment. This Annual Report on Form 10-K also contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those anticipated in the forward-looking statements as a result of factors that are described below and elsewhere in this report.

Risks related to our business and strategy

We face intense international, national, regional and local competition and if we are unable to compete successfully, it could have an adverse effect on our revenue, revenue growth rate, if any, and market share.

The long-term oxygen therapy market and the non-invasive ventilator market are highly competitive industries. We compete with a number of manufacturers and distributors of portable oxygen concentrators, as well as providers of other long-term oxygen therapy solutions such as home delivery of oxygen tanks or cylinders, stationary concentrators, transfilling concentrators, and liquid oxygen. In the non-invasive ventilator market, we compete with manufacturers and distributors of other portable non-invasive ventilators, as well as HME providers that supply these products.

Our significant manufacturing competitors are Respironics (a subsidiary of Koninklijke Philips N.V.), Invacare Corporation, Caire Medical (subsidiary of NGK Spark Plug), DeVilbiss Healthcare (a subsidiary of Drive Medical), O2 Concepts, Precision Medical, Resmed, Gas Control Equipment (subsidiary of Colfax), Breathe Technologies, Inc. (recently announced to be acquired by Hill-Rom Holdings, Inc.), Breas Medical, Ventec Life Systems, Covidien, and Nidek Medical. Additional competitors have also pre-announced upcoming product launches of portable oxygen concentrators including 3B Medical, SysMed, and Bellascuro. Given the relatively straightforward regulatory path in the oxygen therapy and non-invasive ventilator device manufacturing market, we expect that the industry will become increasingly competitive in the future. For example, some major competitors have implemented direct-to-consumer sales models, which may increase their competitiveness and sales to patients, and we have recently seen the cost per generated lead trend higher than historical averages that may in part be due to increased competition. However, the strategies of these major competitors are currently limited to direct-to-consumer sales and do not include direct-to-consumer rentals where they would be responsible to meet national accreditation and state-by-state licensing requirements and secure Medicare billing privileges. Manufacturing companies compete for sales to providers primarily on the basis of price, quality/reliability, financing, bundling, product features, and service.

For many years, Lincare, Inc. (a subsidiary of the Linde Group), Apria Healthcare, Inc., AdaptHealth Corp., Aerocare Holdings, Inc. and Rotech Healthcare, Inc. have been among the market leaders in providing respiratory therapy products, while the remaining market is serviced by local providers. Because of reimbursement reductions, we expect more industry consolidation and volatility in ordering patterns based on how providers are restructuring their businesses and their access to capital. Respiratory therapy providers compete primarily on the basis of product features and service, rather than price, since reimbursement levels are established by Medicare and Medicaid, or by the individual determinations of private payors.

Some of our competitors are large, well-capitalized companies with greater resources than we have. As a consequence, they are able to spend more aggressively on product development, marketing, sales and other product initiatives than we can. Some of these competitors have:

- significantly greater name recognition;
- established relationships with healthcare professionals, customers and third-party payors;
- established distribution networks;
- additional lines of products, and the ability to offer rebates or bundle products to offer higher discounts, lower pricing, longer warranties, financing or extended terms, other incentives to gain a competitive advantage;
- greater history in conducting research and development, manufacturing, marketing and obtaining regulatory approval for respiratory device products; and
- greater financial and human resources for product development, sales and marketing, and patent litigation.

As a result, our competitors may be able to respond more quickly and effectively than we can due to new or changing opportunities, technologies, standard regulatory and reimbursement development and customer requirements. In light of these advantages that our competitors maintain, even if our technology and direct-to-consumer distribution strategy is more effective than the technology and distribution strategy of our competitors, including those who have adopted or may in the future adopt direct-to-consumer sales models, current or potential customers might accept competitor products and services in lieu of purchasing our products. We anticipate that we will face increased competition in the future as existing companies and competitors develop new or improved products and distribution strategies and as new companies enter the market with new technologies and distribution strategies. We may not be able to compete effectively against these organizations. Our ability to compete successfully and to increase our market share is dependent upon our reputation for providing responsive, professional and high-quality products and services and achieving strong customer satisfaction. Increased competition in the future could adversely affect our revenue, revenue growth rate, margins and market share.

We depend on a limited number of customers for a significant portion of our sales revenue and the loss of, or a significant shortfall in demand from, these customers could have a material adverse effect on our financial condition and operating results.

We receive a significant amount of our sales revenue from a limited number of customers, including distributors, HME providers, our private label partner and resellers. For the years ended December 31, 2019, 2018, and 2017, sales revenue to our top 10 customers accounted for approximately 33.5%, 37.9% and 40.1%, respectively, of our total revenue. No single customer represented more than 10% of our total revenue for the year ended December 31, 2019 and one single customer represented more than 10% of our total revenue for the years ended December 31, 2018 and 2017. We expect that sales to relatively few customers will continue to account for a significant percentage of our total revenue in future periods. Our future success will significantly depend upon the timing and volume of business from our largest customers and the financial and operational success of these customers. However, we can provide no assurance that any of these customers or any of our other customers will continue to purchase our products at current levels, pricing, or at all, and our revenue could fluctuate significantly due to changes in customer order levels, economic conditions, the adoption of competitive products, or the loss of, reduction of business with, or less favorable terms with any of our largest customers. For example, we have previously experienced a decline in sales to one large national homecare provider who purchased through our private label partner. We have also experienced a decline in sales from other home medical equipment providers and these providers have communicated to us that they continue to be subject to capital constraints. Certain providers have also indicated that they intend to reduce or limit purchases in the future. If we were to lose one of our key customers or have a key customer significantly reduce its volume of business with us, such as we previously experienced with the large national homecare provider, our revenue may be materially reduced and there would be an adverse effect on our business, financial condition and results of operations.

We obtain some of the components, subassemblies and completed products included in our products from a single source or a limited group of manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays, an inability to meet customer demand, substantial loss in revenue, and an adverse effect on our financial condition and results of operations.

We utilize single-source suppliers for some of the components and subassemblies we use in our Inogen One systems, our Inogen At Home systems, and our Tidal Assist Ventilators (TAV). For example, we have elected to source certain key components from single sources of supply, including our batteries, motors, valves, TAV-compatible stationary concentrators, columns, and some molded plastic components. Our dependence on single-source suppliers of components may expose us to several risks, including, among other things:

- our suppliers may encounter financial hardships as a result of unfavorable economic and market conditions unrelated to our demand for components, which could inhibit their ability to fulfill our orders and meet our requirements;
- suppliers may fail to comply with regulatory requirements, be subject to lengthy compliance, validation or qualification periods, or make errors in manufacturing components that could negatively affect the performance or safety of our products or cause delays in supplying of our products to our customers;
- newly identified suppliers may not qualify under the stringent quality regulatory standards to which our business is subject, which could inhibit their ability to fulfill our orders and meet our requirements;
- we or our suppliers may not be able to respond to unanticipated changes in customer orders, and if orders do not match forecasts, we or our suppliers may have excess or inadequate inventory of materials and components;
- we may be subject to price fluctuations due to a lack of long-term supply arrangements for key components or changes in import tariffs;
- we may experience delays in delivery by our suppliers due to customs clearing delays, shipping delays, scarcity of raw materials or changes in demand from us or their other customers;

- our suppliers may be unable to meet demands due to the effect of exposure to infectious disease and epidemics, including the coronavirus outbreak;
- we or our suppliers may lose access to critical services, tools, moldings, and components, resulting in an interruption in the manufacture, assembly and shipment of our systems;
- our suppliers may be subject to allegations by other parties of misappropriation of proprietary information in connection with their supply of products to us, which could inhibit their ability to fulfill our orders and meet our requirements;
- fluctuations in demand for products that our suppliers manufacture for others may affect their ability or willingness to deliver components to us in a timely manner;
- our suppliers may wish to discontinue supplying components or services to us; and
- we may not be able to find new or alternative components or reconfigure our system and manufacturing processes in a timely manner if the necessary components become unavailable.

We have experienced supply problems with one or more of our suppliers and may again experience problems in the future. For example, we experienced issues with our suppliers sourcing certain components of our Inogen One G5 product in the fourth quarter of 2019 and the first quarter of 2020, which may recur in the future, and which led to orders not being filled in a timely manner. We were not able to obtain sufficient quantities of the required component and could not validate an alternative component in a timely manner. Therefore, we were required to delay manufacturing until additional supplies became available. In the future, we may face similar situations and we may not be able to quickly establish additional or replacement suppliers, particularly for our single source components or subassemblies, and may experience similar delays in manufacturing. Any interruption or delay in the supply of components or subassemblies, or our inability to obtain components or subassemblies from alternate sources at acceptable prices in a timely manner, could impair our ability to meet the demand of our customers and cause them to cancel orders or switch to competitive products.

In addition, we may be deemed to manufacture or contract to manufacture products that contain certain minerals that have been designated as “conflict minerals” under the Dodd-Frank Wall Street Reform and Consumer Protection Act. As a result, we may be required to perform due diligence to determine the origin of such minerals and disclose and report whether or not such minerals originated in the Democratic Republic of the Congo or adjoining countries. The implementation of these requirements could adversely affect the sourcing, availability, and pricing of minerals used in the manufacture of our products. In addition, we have incurred additional costs to comply with the disclosure requirements, including costs related to determining the source of any of the relevant minerals and metals used in our products. If any of these risks materialize, costs could significantly increase and our ability to meet demand for our products could be impacted. If we fail to comply with the applicable regulations, we could be required to pay civil penalties, face criminal prosecution and, in some cases, be prohibited from distributing our products in commerce until the products or component substances are brought into compliance. If we are unable to satisfy commercial demand for our products in a timely manner, our ability to generate revenue would be impaired, market acceptance of our products could be adversely affected, and customers may instead purchase or use alternative products. In addition, we could be forced to secure new or alternative components and subassemblies through a replacement supplier. Finding alternative sources for these components and subassemblies could be difficult in certain cases and may entail a significant amount of time and disruption. In some cases, we would need to change the components or subassemblies if we sourced them from an alternative supplier. This, in turn, could require a redesign of our products and, potentially, require additional Food and Drug Administration (FDA) clearance or approval before we could use any redesigned product with new components or subassemblies, thereby causing further costs and delays that could adversely affect our business, financial condition and results of operations.

If we are unable to continue to enhance our existing products and develop and market new products that respond to customer needs and preferences and achieve market acceptance, we may experience a decrease in demand for our products and our business could suffer.

We may not be able to compete as effectively with our competitors and ultimately satisfy the needs and preferences of our customers unless we can continue to enhance existing products and develop new innovative products. Product development requires significant financial, technological and other resources. While we expended \$9.4 million, \$7.0 million and \$5.3 million for the years ended December 31, 2019, 2018, and 2017, respectively, in research and development efforts, we cannot assure that this level of investment will be sufficient to maintain a competitive advantage in product innovation, which could cause our business to suffer. In addition, we plan to sell the TAV, the newly acquired technology from New Aera, through our domestic direct-to-consumer sales channel and our business-to-business sales channels worldwide, pending reimbursement and regulatory clearances in each market. We also plan to incorporate the TAV technology directly into our oxygen concentrators. Product improvements and new product introductions also require significant planning, design, development, patent protection, and testing at the technological, product, and manufacturing process levels and we may not be able to timely develop product improvements or new products or obtain necessary

patent protection and regulatory clearances or approvals for such product improvements or new products in a timely manner, or at all. Our competitors' new products may enter the market before our new products reach the market, be more effective with more features, obtain better market acceptance, or render our products obsolete. Any new products that we develop or acquire, including the TAV, may not receive market acceptance or otherwise generate any meaningful sales or profits for us relative to our expectations based on, among other things, existing and anticipated investments in manufacturing capacity and commitments to fund advertising, marketing, promotional programs and research and development. In addition, if we are unable to seek and obtain regulatory approval or adequate coverage and reimbursement for any new products that we develop or introduce, including the TAV, in a timely manner or at all, we may realize lower revenue than expected or even no revenue at all from these products. As a result, our business, financial condition and results of operations could be materially harmed.

A significant majority of our rental patients who use our product have health coverage under the Medicare program, and recently enacted and future changes in the reimbursement rates or payment methodologies under Medicare, Medicaid and other government programs have affected and could continue to materially and adversely affect our business and operating results.

As a provider of oxygen equipment rentals, we depend heavily on Medicare reimbursement as a result of the higher proportion of elderly persons suffering from chronic long-term respiratory conditions. Medicare Part B, or Supplementary Medical Insurance Benefits, provides coverage to eligible beneficiaries that include items of durable medical equipment for use in the home, such as oxygen equipment and other respiratory devices. We believe that up to 56% of long-term oxygen therapy patients in the United States have primary coverage under traditional fee-for-service Medicare Part B. There are increasing pressures on Medicare to control healthcare costs and to reduce or limit reimbursement rates for home medical products.

Legislation, including the Medicare Prescription Drug, Improvement, and Modernization Act of 2003, the Deficit Reduction Act of 2005, the Medicare Improvements for Patients and Providers Act of 2008, and the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, contain provisions that directly impact reimbursement for the durable medical equipment products provided by us:

- The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 significantly reduced reimbursement for inhalation drug therapies beginning in 2005, reduced payment amounts for certain durable medical equipment, including oxygen, beginning in 2005, froze payment amounts for other covered home medical equipment items through 2008, established a competitive bidding program for home medical equipment and implemented quality standards and accreditation requirements for durable medical equipment suppliers.
- The Deficit Reduction Act of 2005 limited the total number of continuous rental months for which Medicare will pay for oxygen equipment to 36 months, after which time there is generally no additional reimbursement to the supplier (other than for periodic, in-home maintenance and servicing). The Deficit Reduction Act of 2005 also provided that title of the equipment would transfer to the beneficiary, which was later repealed by the Medicare Improvements for Patients and Providers Act of 2008. For purposes of the rental cap, the Deficit Reduction Act of 2005 provided for a new 36-month rental period that began January 1, 2006 for all oxygen equipment. After the 36th continuous month during which payment is made for the oxygen equipment, the supplier is generally required to continue to furnish the equipment during the period of medical need for the remainder of the useful lifetime of the equipment, provided there are no breaks in service due to medical necessity that exceed 60 days. The reasonable useful lifetime for our portable oxygen equipment is 60 months. After 60 months, if the patient requests, and the patient meets Medicare coverage criteria, the rental cycle starts over and a new 36-month rental period begins. There are no limits on the number of 60-month cycles over which a Medicare patient may receive benefits and an oxygen therapy provider may receive reimbursement, so long as such equipment continues to be medically necessary for the patient. We anticipate that the Deficit Reduction Act of 2005 oxygen payment rules will continue to negatively affect our net revenue on an ongoing basis, as each month additional customers reach the capped rental period in month thirty-seven, resulting in potentially two or more years without rental income from these customers while we continue to incur customer service and maintenance costs. Our capped patients as a percentage of total patients on service was approximately 20.3% as of December 31, 2019, which was slightly higher than the capped patients as a percentage of total patients on service of approximately 19.1% as of December 31, 2018. The percentage of capped patients may fluctuate over time as new patients come on service, patients come off of service before and during the capped rental period, and existing patients enter the capped rental period. We cannot predict the potential impact to rental revenues in future periods associated with patients in the capped rental period.
- The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, includes, among other things, new face-to-face physician encounter requirements for certain durable medical equipment and home health services, and a requirement that by 2016, the competitive bidding process must be nationalized or prices in non-competitive bidding areas must be adjusted to match competitive bidding prices. As of January 1, 2017, CMS has decreased prices for durable medical equipment in non-competitive bidding areas to match competitive bidding prices.

These legislative provisions as currently in effect have had and may continue to have a material and/or adverse effect on our business, financial condition and results of operations.

The U.S. Department of Health and Human Services (HHS) Office of Inspector General (OIG) has recommended states to review Medicaid reimbursement for durable medical equipment (DME) and supplies. The OIG cites an earlier report estimating that four states (California, Minnesota, New York, and Ohio) could have saved more than \$18.1 million on selected DME items if their Medicaid prices were comparable to those under round one of the Medicare competitive bidding program. Since issuing those reports, the OIG identified \$12 million in additional savings that the four states could have obtained on the selected items by using pricing similar to the Medicare round two competitive bidding and national mail-order programs. In light of varying Medicaid provider rates for DME and the potential for lower spending, the OIG recommends that CMS (1) seek legislative authority to limit state Medicaid DME reimbursement rates to Medicare program rates, and (2) encourage further reduction of Medicaid reimbursement rates through competitive bidding or manufacturer rebates (the OIG did not determine the cost of implementing a rebate or competitive bidding program in each state). This was effective beginning January 1, 2018.

Due to budgetary shortfalls, many states are considering, or have enacted, cuts to their Medicaid programs. In addition, many private payors reimburse at a percentage of the Medicare rates. Medicare, Medicaid and private payor reimbursement rate cuts have included, or may include, elimination or reduction of coverage for our products, amounts eligible for payment under co-insurance arrangements, or payment rates for covered items. Continued state budgetary pressures could lead to further reductions in funding for the reimbursement for our products which, in turn, would adversely affect our business, financial condition and results of operations.

On January 17, 2017, HHS published a final rule effective March 20, 2017 to address the appeals backlog that includes allowing certain decisions to be made by the Medicare Appeals Council to set precedent for lower levels of appeal, expansion of the pool of available adjudicators, and increasing decision-making consistency among the levels of appeal. In addition, it included provisions to improve the efficiency by streamlining the appeals process, allowing attorneys to handle some procedural matters at the administrative law judge level, and proposed funding increases and legislative actions outlined in the federal budget for 2017. HHS estimates this could eliminate the backlog in appeals by 2021. However, if this plan is not effective, the appeals backlog could increase, which could increase our collection times and decrease our cash flow, increase billing administrative costs, and/or increase the provision for rental revenue adjustments, which would adversely affect our business, financial condition and results of operations.

The competitive bidding process under Medicare could negatively affect our business and financial condition.

The Medicare Prescription Drug, Improvement, and Modernization Act of 2003 requires the Secretary of HHS to establish and implement programs under which competitive acquisition areas are established throughout the United States for purposes of awarding contracts for the furnishing of competitively priced items of durable medical equipment, including oxygen equipment.

Effective January 1, 2019, Medicare beneficiaries may receive durable medical equipment from any Medicare-enrolled supplier until new contracts are in effect under competitive bidding Round 2021, which is expected to begin on January 1, 2021. Reimbursement rates between January 1, 2019 and December 31, 2020 will be set at the current pricing level throughout the United States for all Medicare patients, subject to Consumer Price Index (CPI) and budget neutrality adjustments. Pricing in competitive bidding areas will be subject to annual CPI adjustments beginning in 2019 until Round 2021 begins. However, CMS also changed the calculation on budget neutrality to apply the offset to all oxygen and oxygen equipment classes beginning January 1, 2019 instead of previously only applying these adjustments to stationary oxygen equipment and oxygen contents. Based on these CPI and budget neutrality adjustments, effective January 1, 2019 the average Medicare reimbursement rates in former competitive bidding areas decreased to \$72.92 a month for E1390 and \$35.72 a month for E1392. Effective January 1, 2020, the average Medicare reimbursement rates were increased by 1.5% to \$73.98 a month for E1390 and \$36.25 a month for E1392 in these regions that were previously subject to competitive bidding. In addition, the average Medicare reimbursement rates in non-rural, non-former competitive bidding areas increased by 3.5% to \$74.84 a month for E1390 and \$36.87 a month for E1392. In Round 2021 of DMEPOS competitive bidding program, there have been some revisions to the bidding methodology including surety bond requirements, lead item pricing, and setting reimbursement rates at the maximum winning bid rate instead of the median winning bid rate. In prior rounds of competitive bidding, our products were categorized in the product category of respiratory equipment and related supplies and accessories, which included oxygen equipment, continuous positive airway pressure (CPAP) devices and respiratory assist devices (RADs) and related supplies and accessories. In Round 2021 of bidding, oxygen and oxygen equipment is its own product category and the lead item has been established as E1390. However, due to the lead item pricing methodology based on the 2015 standard Medicare fee schedule, E1392 reimbursement rates could be reduced significantly (we estimate approximately 42%) even if E1390 reimbursement rates do not change. This would lead to combined E1390 plus E1392 reimbursement rates to decrease by approximately 15%. The bidding window closed on September 18, 2019. It is unclear how pricing will be impacted due to these new bids. We expect contracts and pricing to be announced in 2020.

In addition to regional pricing, CMS imposed different pricing on “frontier states” and rural areas. CMS defines frontier states as states where more than 50% of the counties in the state have a population density of 6 people or less per square mile and rural states are defined as states where more than 50% of the population lives in rural areas per census data. Current frontier states include MT, ND, SD and WY; rural states include ME, MS, VT and WV; and non-contiguous United States areas include AK, HI, Guam and Puerto Rico. Effective June 1, 2018 through December 31, 2020, for frontier and rural states, frontier and rural zip codes in non-frontier/rural states and non-contiguous United States areas, the single payment amount will be the 50/50 blended reimbursement rates based on an average of the pre-competitive reimbursement bidding rates and the current average reimbursement rates to account for higher servicing costs in these areas. In 2019, this rate was \$134.71 a month for E1390 and \$44.32 a month for E1392, and this rate increased by 1.5% effective January 1, 2020 to \$136.71 a month for E1390 and \$44.93 a month for E1392. We estimate that approximately 15% of our patients are eligible to receive the higher reimbursement rates based on the geographic locations of our current patient population.

Cumulatively in previous rounds of competitive bidding, we were offered contracts for a substantial majority of the CBAs and product categories for which we submitted bids. Effective January 1, 2017, we believe we had access to over 90% of the Medicare oxygen therapy market based on our analysis of the 103 CBAs that we won out of the 130 total CBAs. These 130 CBAs represented approximately 36% of the Medicare market with the remaining approximately 64% of the market not subject to competitive bidding. As of January 1, 2019, and until Round 2021 of competitive bidding becomes effective, we can choose to accept Medicare oxygen patients throughout the United States. As of July 2018, we currently operate in all 50 states in the U.S. We did not sell or rent to patients in Hawaii due to the licensure requirements from inception to June 2018.

We cannot guarantee that we will be offered contracts in subsequent rounds of competitive bidding. In all five rounds of competitive bidding in which we have participated, we have gained access to certain CBAs and been excluded from other CBAs.

Medicare revenue, including patient co-insurance and deductible obligations, represented 4.8% of our total revenue in the year ended December 31, 2019 and 4.8% in the year ended December 31, 2018.

Medicare reimbursement for oxygen rental equipment is limited to a maximum of 36 months within a 60-month service period, and the equipment remains the property of the home oxygen supplier. The supplier that billed Medicare for the 36th month of service continues to be responsible for the patient’s oxygen therapy needs for months 37 through 60, and there is generally no additional reimbursement for oxygen generating portable equipment for these later months. CMS does not separately reimburse suppliers for oxygen tubing, cannulas and supplies that may be required for the patient. The supplier is required to keep the equipment provided in working order and in some cases, CMS will reimburse for repair costs. At the end of the five-year useful life of the equipment, the patient may request replacement equipment and, if he or she can be re-qualified for the Medicare benefit, a new maximum 36-month payment cycle out of the next 60 months of service would begin. The supplier may not arbitrarily issue new equipment. We have analyzed the potential impact to revenue associated with patients in the capped rental period and have deferred \$0 associated with the capped rental period as of December 31, 2019 and December 31, 2018. Our capped patients as a percentage of total patients on service was approximately 20.3% as of December 31, 2019, which was slightly higher than the capped patients as a percentage of total patients on service of approximately 19.1% as of December 31, 2018. The percentage of capped patients may fluctuate over time as new patients come on service, patients come off of service before and during the capped rental period, and existing patients enter the capped rental period.

Our obligations to service Medicare patients over the rental period include supplying working equipment that meets each patient’s oxygen needs pursuant to his/her doctor’s prescription and certificate of medical necessity form and supplying all disposables required for the patient to operate the equipment, including cannulas, filters, replacement batteries, carts and carry bags, as needed. If the equipment malfunctions, we must repair or replace the equipment. We determine what equipment the patient receives, as long as that equipment meets the physician’s prescription, and we can deploy used assets in working order as long as the prescription requirements are met. We must also procure a recertification of the certificate of medical necessity from the patient’s doctor to confirm the patient’s need for oxygen therapy one year after the patient first receives oxygen therapy and one year after each new 36-month reimbursement period begins. The patient can choose to receive oxygen supplies and services from another supplier at any time, but the supplier may only transition the patient to another supplier in certain circumstances.

Round 2021 of the competitive bidding program includes non-invasive ventilation (NIV) as a new product category effective January 1, 2021 for code E0466. Average Medicare reimbursement rates for HCPCS code E0466 were a monthly, non-capped rental with rates of \$1,042.26 a month in 2019, and increased 0.9% effective January 1, 2020 to \$1,051.64 a month, excluding Puerto Rico where the monthly Medicare reimbursement rate for E0466 was \$1,827.24 per month in 2019 and increased to \$1,843.69 a month effective January 1, 2020. Since this is the first-time non-invasive ventilators are being included in the competitive bidding program, it is uncertain what impact bidding will have on the reimbursement rates. If there is a significant decline in reimbursement rates or changes in coverage criteria, this may negatively impact the adoption of the TAV product by home medical equipment providers, or increase pricing pressure, as well as negatively impact our rental reimbursement rates, which would adversely affect our business, financial condition and results of operations.

It is also uncertain if we will win any bids for NIV for Round 2021 of the competitive bidding program. We have not previously provided NIV products to Medicare beneficiaries. If we do not win contracts to service Medicare beneficiaries for NIV in Round 2021, that may limit our ability to grow rental revenue for NIV.

It is also uncertain if the TAV product acquired from New Aera will be reimbursable in its current configuration under HCPCS code E0466. We requested confirmation on the assigned HCPCS codes for the TAV system from the Pricing, Data Analysis, and Coding Contractor in August 2019 following the closing of the New Aera transaction. In August 2019, we received positive confirmation that this product was assigned HCPCS code E0466. However, in September 2019, we received a revised communication that the product was assigned HCPCS code E1390 and E1352, which was then revoked at our request in December 2019. In September 2019, we appealed to the Centers for Medicare and Medicaid Services, and in January 2020 our appeal was denied. We are currently pursuing additional appeal opportunities. If we do not receive revised coding, it could limit this product's adoption by home medical equipment providers and also our direct rentals and would adversely affect our business, financial condition and results of operations.

On May 15, 2019, a bi-partisan bill was introduced in the House of Representatives that would provide relief from competitive bidding in non-bid areas. As of February 11, 2020, there were 73 co-sponsors on this bill. If passed, the bill would provide retroactive relief to rural areas by making the 50/50 blended reimbursement rate in rural and noncontiguous areas to all items and services furnished with dates of service from June 1, 2018, with no end date, and by introducing a 75/25 blended reimbursement rate for areas other than rural or noncontiguous areas. The legislation also proposes to remedy a double-dip cut to oxygen payments caused by the misapplication of a 2006 budget neutrality offset balancing increased utilization for oxygen generating portable equipment with lower reimbursement for stationary equipment. There is no known timing on voting on this bill.

On March 11, 2019, the current presidential administration sent Congress a 2020 budget proposal that included language on competitive bidding. Specifically, the proposal would eliminate the requirement under the competitive bidding program that CMS pay a single payment amount based on the median bid price, proposing instead that CMS pay winning suppliers at their own bid amounts. Additionally, this proposal would expand competitive bidding to all areas of the country, including rural areas, which will be based on competition in those areas rather than on competition in urban areas. This specific proposal is estimated to save the government \$7.1 billion in Medicare savings and \$0.4 billion in Medicaid savings over 10 years. In addition to changes to competitive bidding, the 2020 budget proposal would enable CMS not to impose the face-to-face requirement on all providers for durable medical equipment. Furthermore, the proposal seeks to address excessive billing of durable medical equipment that requires refills or serial claims. Specifically, Medicare would gain authority to test whether using a benefits manager for serial durable medical equipment claims would result in lower improper payments and reductions in inappropriate utilization. The benefits manager would be responsible for ensuring beneficiaries were receiving the correct quantity of supplies or service for the appropriate time period. In addition, the proposal allows an administrative penalty of \$50 for Part B items/services and \$100 for Part A services on providers for ordering high-risk, high-cost items or services without proper documentation, such as diagnosis or encounter data. Lastly, the proposal would expand prior authorization to additional items and services that are both high-cost and at high-risk for improper payments. These provisions were not included in the latest omnibus budget, so it is unclear if any of these proposals will be implemented. We believe additional cuts to reimbursement would continue to drive conversion to non-delivery technologies, including portable oxygen concentrators, however this could also exacerbate patient access issues for treatment.

On August 6, 2019, CMS issued a proposed rule to establish methodologies to modernize pricing of new DMEPOS items and services based on commercial pricing data. In addition, the proposed rule recommends streamlining requirements related to face-to-face encounters, written orders prior to delivery and/or prior authorizations to reduce provider confusion. Lastly, the proposed rule recommends revising the existing DMEPOS competitive bidding program regulations to recognize that changes of ownership may occur on shorter timeframes and revising the submission of a hearing request in notices of breach of contract. CMS solicited comments on this proposed rule through September 27, 2019.

Although we continue to monitor developments regarding the implementation of the competitive bidding program, we cannot predict the outcome of the competitive bidding program on our business when fully implemented, nor the Medicare reimbursement rates that will be in effect in future years for the items subject to competitive bidding, including our products. We expect that the stationary oxygen and non-delivery ambulatory oxygen reimbursement rates will continue to fluctuate, and a large negative payment adjustment would adversely affect our business, financial condition and results of operations.

The Medicare Fee-For-Service (FFS) sequestration reduction has and may continue to negatively affect our revenue and profits.

Medicare FFS claims with dates of service on or after April 1, 2013 are subject to a 2% reduction in Medicare payment, including claims for DMEPOS, including in competitive bidding areas. The claims payment adjustment is applied to all claims after determining co-insurance, any applicable deductible, and any applicable Medicare secondary payment adjustments. These reductions

are included in rental revenue adjustments. This sequestration reduction will continue until further notice. As a result, this could adversely affect our financial condition and results of operations.

The implementation of prior authorization rules for DMEPOS under Medicare could negatively affect our business and financial condition.

CMS has issued a final rule to require Medicare prior authorization (PA) for certain durable medical equipment, prosthetics, orthotics, and supplies (DMEPOS) that the agency characterizes as “frequent subject to unnecessary utilization.” The final rule was published on December 30, 2015 and specified an initial master list of 135 items that could potentially be subject to PA. Initially stationary oxygen rentals (code E1390) was included on the master list, but it was later removed. On April 22, 2019, stationary oxygen rentals (E1390) was again added to the list of potential codes that could be subject to PA. The master list is updated annually and published in the Federal Register. The presence of an item on the master list does not automatically mean that a PA is required. CMS will select a subset of these master list items for its “Required Prior Authorization List.” There will be a notice period of at least 60 days prior to implementation. The ruling does not create any new clinical documentation requirements; instead the same information necessary to support Medicare payment will be required *prior* to the item being furnished to the beneficiary. CMS has proposed that reasonable efforts are made to provide a PA decision within 10 days of receipt of all applicable information, unless this timeline could seriously jeopardize the life or health of the beneficiary or the beneficiary’s ability to regain maximum function, in which case the proposed PA decision would be 2 business days. CMS will issue additional sub-regulatory guidance on these timelines in the future. If our products are subject to prior authorization, it could reduce the number of patients qualified to come on service using their Medicare benefits, it could delay the start of those patients while we wait for the prior authorization to be received, and/or it could decrease sales productivity. As a result, this could adversely affect our business, financial conditions and results of operations.

Healthcare reform measures may have a material adverse effect on our business and results of operations.

In the United States, the legislative landscape, particularly as it relates to healthcare regulation and reimbursement coverage, continues to evolve. In March 2010, the Patient Protection and Affordable Care Act was passed, which has the potential to substantially change healthcare financing by both governmental and private insurers, and significantly impact the U.S. medical device industry.

In addition, other legislative changes have been proposed and adopted in the United States since the Patient Protection and Affordable Care Act was enacted. On August 2, 2011, the Budget Control Act of 2011 created, among other things, measures for spending reductions by Congress. A Joint Select Committee on Deficit Reduction, tasked with recommending a targeted deficit reduction of at least \$1.2 trillion for the years 2013 through 2021, was unable to reach required goals, thereby triggering the legislation’s automatic reduction to several government programs. This includes aggregate reductions of Medicare reimbursements to providers up to 2% per fiscal year, which went into effect on April 1, 2013, and will remain in effect through 2024 unless additional Congressional action is taken. We expect that additional state and federal healthcare reform measures will be adopted in the future, any of which could limit the amounts that federal and state governments will pay for healthcare products and services, which could result in reduced demand for our products or additional pricing pressures.

In addition to the legislative changes discussed above, the Patient Protection and Affordable Care Act also requires healthcare providers to voluntarily report and return an identified overpayment within 60 days after identifying the overpayment. Failure to repay the overpayment within 60 days will result in the claim being considered a “false claim” and the healthcare provider will be subject to False Claims Act liability.

State legislative bodies also have the right to enact legislation that would impact requirements of home medical equipment providers, including oxygen therapy providers. Some states have already enacted legislation that would require in-state facilities. We are monitoring all state requirements to maintain compliance with state-specific legislation and access to service patients in these states. To the extent such legislation is enacted, it could result in increased administrative costs or otherwise exclude us from doing business in a particular state, which would adversely impact our business, financial condition and results of operations.

We face uncertainties that might result from modification or repeal of any of the provisions of the Patient Protection and Affordable Care Act, including as a result of current and future executive orders and legislative actions. The impact of those changes on us and potential effect on the durable medical equipment industry as a whole is currently unknown. But, any changes to the Patient Protection and Affordable Care Act are likely to have an impact on our results of operations and may have a material adverse effect on our results of operations. We cannot predict what other healthcare programs and regulations will ultimately be implemented at the federal or state level or the effect of any future legislation or regulation in the United States may have on our business.

We depend upon reimbursement from Medicare, private payors, Medicaid and payments from patients for a significant portion of our revenue, and if we fail to manage the complex and lengthy reimbursement process, our business and operating results could be adversely affected.

A significant portion of our rental revenue is derived from reimbursement by third-party payors. We accept assignment of insurance benefits from customers and, in a majority of cases, invoice and collect payments directly from Medicare, private payors and Medicaid, as well as direct from patients under co-insurance provisions. For the years ended December 31, 2019, 2018 and 2017, approximately 5.9%, 6.2% and 9.6%, respectively, of our total revenue was derived from Medicare, private payors, Medicaid, and individual patients who directly receive reimbursement from third-party payors and this percentage could increase as a percent of total revenue if we increase net patient additions faster than our sales revenue growth.

Our financial condition and results of operations may be affected by the healthcare industry's reimbursement process, which is complex and can involve lengthy delays between the time that a product is delivered to the consumer and the time that the reimbursement amounts are settled. Depending on the payor, we may be required to obtain certain payor-specific documentation from physicians and other healthcare providers before submitting claims for reimbursement. Certain payors have filing deadlines and they will not pay claims submitted after such time. We are also subject to extensive pre-payment and post-payment audits by governmental and private payors that could result in material delays, refunds of monies received or denials of claims submitted for payment under such third-party payor programs and contracts. We cannot ensure that we will be able to continue to effectively manage the process, it would adversely affect our business, financial condition and results of operations.

We do not have long-term supply contracts with many of our third-party suppliers.

We purchase components and subassemblies from third-party suppliers, including some of our single-source suppliers, through purchase orders and do not have long-term supply contracts with many of these third-party suppliers. Many of our third-party suppliers, therefore, are not obligated to perform services or supply products to us for any specific period, in any specific quantity or at any specific price, except as may be provided in a particular purchase order. We do not maintain large volumes of inventory from most of these suppliers. If we inaccurately forecast demand or fail to place orders timely enough relative to fluctuating lead time requirements for components or subassemblies, our ability to manufacture and commercialize our products could be delayed and our competitive position and reputation could be harmed. In addition, if we fail to effectively manage our relationships with these suppliers, we may be required to change suppliers which would be time consuming and disruptive and could adversely affect our business, financial condition and results of operations.

If our manufacturing facilities become unavailable or inoperable, we could be unable to continue manufacturing our products and, as a result, our business, financial condition and results of operations could be adversely affected until we are able to secure a new facility.

We assemble our products at our facilities in Richardson, Texas and Goleta, California and through our contract manufacturer in the Czech Republic. In the fourth quarter of 2017, we began using a contract manufacturer in the Czech Republic to assemble our Inogen One G3 concentrators for our international customers. In the first quarter of 2020, we also began using our contract manufacturer in the Czech Republic to manufacture the Inogen One G5 for our international customers. We manufacture the TAV product in Goleta, California. No other manufacturing facilities are currently available to us, particularly facilities of the size and scope of our Texas facility. Our facilities and the equipment we use to manufacture our products would be costly to replace and could require substantial lead time to procure, repair or replace. Our facilities may be harmed or rendered inoperable by natural or man-made disasters, including, but not limited to, fire, flood, earthquakes and power outages, which may render it difficult or impossible for us to manufacture our products for some period of time. If any of our facilities become unavailable to us, we cannot provide assurances that we will be able to secure and equip a new manufacturing facility on acceptable terms, in a timely manner. The inability to manufacture our products, combined with delays in replacing parts inventory and manufacturing supplies and equipment, may result in the loss of customers and/or harm our reputation, and we may be unable to reestablish relationships with those customers in the future. Although we have insurance coverage for certain types of disasters and business interruptions which may help us recover some of the costs of damage to our property, costs of recovery and lost income from the disruption of our business, insurance coverage of certain perils may be limited or unavailable at cost effective rates and may therefore not be sufficient to cover any or all of our potential losses and may not continue to be available to us on acceptable terms, or at all. If our manufacturing capabilities are impaired, we could not be able to manufacture, store, and ship our products in sufficient quantity or a cost effective or timely manner, which would adversely affect our business, financial condition and results of operations.

We rely upon a third-party contract manufacturer for certain manufacturing operations and our business and results of operations may be adversely affected by risks associated with their business, financial condition and the geography in which they operate.

Beginning in the fourth quarter of 2017, we began utilizing a third-party contract manufacturer located in the Czech Republic for production of a portion of our Inogen One G3 concentrators. In 2018 and 2019, our contract manufacturer produced the vast majority of the Inogen One G3 concentrators required to support our international demand and we expect this to continue in 2020 until Inogen One G3 production ceases. We expanded manufacturing at our contract manufacturer to include the Inogen One G5 in the first quarter of 2020. There are a number of risks associated with our dependence on a contract manufacturer, including:

- reduced control over delivery schedules and planning;
- reliance on the quality assurance procedures of a third party;
- risks associated with our contract manufacturer failing to manufacture our products according to our specifications, quality regulations, including the FDA's Quality System regulations, or otherwise manufacturing products that we or regulatory authorities deem to be unsuitable for commercial use;
- risks associated with our contract manufacturer's ability to successfully undergo FDA and other regulatory authority quality inspections;
- potential uncertainty regarding manufacturing yields and costs;
- availability of manufacturing capability and capacity, particularly during periods of high demand;
- risks and uncertainties associated with the location or country where our products are manufactured, including potential manufacturing disruptions caused by social, geopolitical or environmental factors;
- changes in U.S. law or policy governing foreign trade, manufacturing, development and investment in the countries where we manufacture our products, including the World Trade Organization Information Technology Agreement or other free trade agreements;
- delays in delivery by suppliers due to customs clearing delays, shipping delays, scarcity of raw materials and changes in demand from us or their other customers;
- limited warranties provided to us; and
- potential misappropriation of our intellectual property.

These and other risks could impair our ability to fulfill orders, harm our sales and impact our reputation with customers. If our contract manufacturer is unable or unwilling to manufacture our products or components of our products, or if our contract manufacturer discontinues operations, we may be required to identify and qualify alternative manufacturers, which could cause us to be unable to meet our supply requirements to our customers and result in the breach of our customer agreements. The process of qualifying a new contract manufacturer and commencing volume production is expensive and time-consuming, and if we are required to change or qualify a new contract manufacturer, we would likely lose sales revenue and damage our existing customer relationships.

Failure to maintain or obtain new private payor contracts and future reductions in reimbursement rates from private payors could have a material adverse effect on our financial condition and results of operations.

A portion of our rental revenue is derived from private payors. Based on our patient population, we estimate approximately 44% of potential customers have non-Medicare insurance coverage (including Medicare Advantage plans). Failing to maintain and obtain private payor contracts from private insurance companies and employers and secure in-network provider status could have a material adverse effect on our financial condition and results of operations. In addition, private payors are under pressure to increase profitability and reduce costs. In response, certain private payors are limiting coverage or reducing reimbursement rates for the products we provide. We believe that private payor reimbursement levels will generally be reset in accordance with the Medicare reimbursement amounts determined by competitive bidding. We cannot predict the extent to which reimbursement for our products will be affected by competitive bidding or by initiatives to reduce costs for private payors. Failure to maintain or obtain new private payor contracts or the unavailability of third-party coverage or inadequacy of reimbursement for our products would adversely affect our business, financial condition and results of operations.

If we are unable to manage our anticipated growth effectively, our business could be harmed.

We have previously experienced periods of rapid growth in short periods of time. These periods of rapid growth of our business have placed a significant strain on our managerial and operational resources and systems. For example, as our business has grown, we have seen the cost per generated lead trend higher than historical averages. In addition, many of the sales representatives we hired in 2018 were unable to meet sales targets and were thus transitioned out. To continue to grow our business, we must attract and retain capable personnel and manage and train them effectively, particularly related to sales representatives and supporting sales personnel. We must also upgrade our internal business processes and capabilities to create the scalability that a growing business demands. Going forward, we are hiring additional sales representatives at a more controlled pace across all three facilities to expand sales capacity, but our sales representative headcount was down significantly at year-end 2019 compared to year-end 2018. Our growth expectations in direct-to-consumer sales are lower given the reduced number of sales representatives. While we believe we are making the necessary changes to improve sales management infrastructure to support sales representative training and onboarding, it will take more time to evaluate whether these changes are effective in the long term and to the extent they are not effective it may negatively affect our financial condition and results of operations. We have seen increased productivity of our sales representatives in the third and fourth quarters of 2019 and believe we will see this increase through 2020; however, we also expect the benefits of this increase productivity to be partially offset by increased marketing spend.

During 2019, we have signed leases to expand our facilities located in Richardson, Texas and Goleta, California, which are expected to commence in 2020 and 2021. Domestic expansion, combined with our use of a contract manufacturer in Europe to produce a portion of our Inogen One G3 and Inogen One G5 concentrators, is expected to be sufficient to meet our manufacturing needs. However, our anticipated growth will place additional strain on our supply chain and manufacturing facilities, resulting in an increased need for us to carefully monitor parts inventory, capable staffing and quality assurance. Any failure by us to manage the scalability of our process or other aspects of our growth effectively could have an adverse effect on our ability to achieve our development and commercialization goals and negatively affect our financial condition and results of operations.

We may expand through acquisitions of, or investments in, other companies, each of which may divert our management's attention, result in additional dilution to our stockholders, increase expenses, disrupt our operations, and harm our results of operations.

Our business strategy may, from time to time, include acquiring or investing in complementary services, technologies or businesses, such as our acquisition of MedSupport in 2017 and our acquisition of New Aera in August 2019. We do not have an extensive history of acquiring other companies and cannot assure you that we will successfully identify suitable acquisition candidates, integrate or manage disparate technologies, lines of business, personnel and corporate cultures, realize our business strategy or the expected return on our investment, or manage a geographically dispersed company. Any such acquisition or investment could materially and adversely affect our financial condition and results of operations. We may issue equity securities which could dilute current stockholders' ownership, incur debt, assume contingent or other liabilities and expend cash in acquisitions, which could negatively impact our financial condition, stockholder equity, and stock price. We completed our acquisition of New Aera in August 2019 and have begun the integration process. The acquisition and integration process is complex, expensive and time-consuming, and may cause an interruption of, or loss of momentum in, product development and sales activities and operations of both companies, and we may incur substantial cost and expense, as well as divert the attention of management.

Acquisitions and other strategic investments involve significant risks and uncertainties, including:

- the potential failure to achieve the expected benefits of the combination or acquisition;
- the potential failure to successfully develop or commercialize the acquired products or technology;
- unanticipated costs and liabilities;
- difficulties in integrating new products, businesses, operations, and technology infrastructure in an efficient and effective manner;
- difficulties in maintaining customer relations;
- the potential loss of key employees of the acquired businesses;
- the diversion of the attention of our senior management from the operation of our daily business;
- the potential adverse effect on our cash position to the extent that we use cash for the purchase price;
- the potential incurrence of interest expense and debt service requirements if we incur debt to pay for an acquisition;
- the potential issuance of securities that would dilute our stockholders' percentage ownership;

- the potential to incur large and immediate write-offs and restructuring and other related expenses;
- the potential of amortization expenses related to intangible assets;
- the potential failure to achieve anticipated reimbursement classifications for acquired products;
- the potential to become involved in intellectual property litigation related to such acquisitions or strategic investments; and
- the inability to maintain uniform standards, controls, policies, and procedures.

Any acquisition or investment, including our acquisition of New Aera, could expose us to unknown liabilities. Moreover, we cannot assure you that we will realize the anticipated benefits of any acquisition or investment. In addition, our inability to successfully operate and integrate newly acquired businesses appropriately, effectively, and in a timely manner could impair our ability to take advantage of future growth opportunities and other advances in technology, as well as on our revenues, gross margins, and expenses.

As part of our ongoing efforts to advance patient preference and maintain our technology leadership position, we acquired New Aera in August 2019. We have made certain assumptions relating to the acquisition, which assumptions may be inaccurate, including the failure to realize the expected benefits of the acquisition, failure to realize expected revenue, higher than expected operating, transaction and integration costs, as well as general economic and business conditions that adversely affect the combined company following the acquisition. If our assumptions relating to the acquisition are inaccurate, we may not be able to realize anticipated synergies and opportunities as a result of the acquisition, and the business may not perform as planned as a result of many of the risks and uncertainties that apply to the acquisition and to the rest of our business. For example, additional risks and uncertainties that could cause actual results to differ materially from currently anticipated results include, but are not limited to; risks relating to our ability to successfully integrate New Aera's business and operations within our existing business and operations; our ability to commercialize the TAV; market acceptance of the TAV; our ability to obtain Medicare or commercial reimbursement for the TAV; our ability to successfully incorporate TAV into our existing products; competition; our sales, marketing and distribution capabilities; our planned sales, marketing, and research and development activities; interruptions or delays in the supply of components or materials for, or manufacturing of, our products, which in certain cases are purchased through sole and single source suppliers; seasonal variations in customer operations; unanticipated increases in costs or expenses; risks associated with international operations; intellectual property risks and the other risks identified in this Annual Report on Form 10-K. We may also encounter difficulties in integrating New Aera into our existing business. If anticipated synergies and opportunities are not realized, our business, operating results and financial condition would be harmed.

We may experience manufacturing problems or delays that could limit our growth or adversely affect our operating results

Our products are manufactured using complex parts and processes, sophisticated equipment and strict adherence to design specifications and quality standards. Any unforeseen manufacturing problems, such as contamination of our facility, equipment malfunction or miscalibration, supply chain shortages, regulatory findings, or failure to strictly follow procedures or meet design specifications, could result in delays or shortfalls in production of our products. Identifying and resolving the cause of any such manufacturing issues could require substantial time and resources. If we are unable to keep up with demand for our products by successfully manufacturing and shipping our products in a timely and quality manner, our operating results could be impaired, market acceptance for our products could be adversely affected and our customers might instead purchase our competitors' products. For example, in July 2019 we experienced unforeseen manufacturing challenges with respect to a battery issue on the Inogen One G3 and a motherboard issue on the Inogen One G5. The ongoing servicing costs associated with these issues, or other manufacturing issues we may experience in the future may increase our cost of goods sold, adversely affect our operating results and harm our reputation. Additionally, regulators may disagree with our handling of any such incidents and take action. Also, although we believe we are addressing these issues, we may experience additional unexpected product defects or errors that could have adverse effects. In addition to these manufacturing issues, we also have experienced issues with our supply chain, as discussed in detail in the risk factor entitled "*We obtain some of the components, subassemblies and completed products included in our products from a single source or a limited group of manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays, an inability to meet customer demand, substantial loss in revenue, and an adverse effect on our financial condition and results of operations.*"

In addition, the introduction of new products may require the development of new manufacturing processes and procedures. While all of our products are assembled using essentially the same basic processes, significant changes in technology, programming, and other variations may be required to meet product specifications. Developing new processes can be very time consuming and affect quality, as such any unexpected difficulty in doing so could delay the introduction of a new product and our ability to produce sufficient quantities of existing products.

We are exposed to the credit and non-payment risk of our HME providers, distributors, private label partners and resellers, especially during times of economic uncertainty and tight credit markets, which could result in material losses.

We sell our products to certain HME providers, distributors, private label partner and resellers on unsecured credit, with terms that vary depending upon the customer's credit history, solvency, cash flow, credit limits and sales history, as well as prevailing terms with similarly situated customers and whether sufficient credit insurance can be obtained. In particular, two customers each represented more than 10% of our net accounts receivable balance with accounts receivable balances of \$10.7 million and \$5.2 million, respectively, as of December 31, 2019, and accounts receivable balances of \$16.2 million and \$4.2 million, respectively, as of December 31, 2018. Challenging economic conditions may impair the ability of our customers to pay for products they have purchased, and as a result, our reserve for doubtful accounts could increase and, even if increased, may turn out to be insufficient. Moreover, even in cases where we have insolvency risk insurance to protect against a customer's bankruptcy, insolvency or liquidation, this insurance typically contains a significant deductible and co-payment obligation and does not cover all instances of non-payment. Our exposure to credit risks of our business partners may increase if our business partners and their end customers are adversely affected by global or regional economic conditions. One or more of these business partners could delay payments or default on credit extended to them, either of which could adversely affect our business, financial condition and results of operations.

We generate a substantial portion of our revenue internationally and are subject to various risks relating to such international activities, which could adversely affect our operating results. In addition, any disruption or delay in the shipping of our products, whether domestically or internationally, may have an adverse effect on our financial condition and results of operations.

During the years ended December 31, 2019, 2018 and 2017, approximately 21.5%, 21.6% and 22.3%, respectively, of our total revenue was generated from customers located outside of the United States. We believe that a significant percentage of our future revenue will continue to come from international sources as we expand our international operations and develop opportunities in other countries. Engaging in international business inherently involves a number of difficulties and risks, including:

- required compliance with anti-bribery laws, such as the U.S. Foreign Corrupt Practices Act and U.K. Bribery Act, data privacy regulations, such as the European Union General Data Protection Regulation (GDPR), labor laws, and anti-competition regulations;
- export or import delays and restrictions;
- obtaining and maintaining regulatory clearances, approvals and certifications;
- laws and business practices favoring local companies;
- difficulties in enforcing agreements and collecting receivables through certain foreign legal systems;
- unstable economic, political, and regulatory conditions;
- supply chain complexities;
- fluctuations in currency exchange rates;
- fluctuations in demand due to country-specific tenders and tender uncertainty and capital expenditure constraints;
- potentially adverse tax consequences, tariffs, customs charges, bureaucratic requirements, and other trade barriers; and
- difficulties protecting or procuring intellectual property rights.

If one or more of these risks occurs, it could require us to dedicate significant resources to remedy, and if we are unsuccessful in finding a solution, our financial condition and results of operations will suffer.

In addition, on June 23, 2016, the United Kingdom (U.K.) held a referendum in which voters approved an exit from the European Union, commonly referred to as "Brexit." This decision created an uncertain political and economic environment in the U.K. and other European Union countries, and the formal process for leaving the European Union has taken years to complete. The U.K. formally left the European Union on January 31, 2020, and is now in a transition period through December 31, 2020. Adverse consequences concerning Brexit or the future of the European Union could include deterioration in global economic conditions, instability in global financial markets, political uncertainty, volatility in currency exchange rates or adverse changes in the cross-border agreements currently in place, any of which could have an adverse impact on our financial results in the future.

A significant amount of our international product sales are currently denominated in U.S. dollars and fluctuations in the value of the U.S. dollar relative to foreign currencies could decrease demand for our products and adversely impact our financial performance. For example, if the value of the U.S. dollar increases relative to foreign currencies, our products could become more costly to the international consumer and therefore less competitive in international markets. Our results of operations and cash flows are, therefore,

subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency of the entities in which they are recorded. For example, for the years ended December 31, 2019 and December 31, 2018, we experienced net foreign currency losses of approximately \$0.2 million and \$0.7 million, respectively, and for the year ended December 31, 2017, we experienced a net foreign currency gain of \$1.3 million. Fluctuations in currency exchange rates could have an adverse impact on our financial results in the future. While we have a hedging program for Euros that attempts to manage currency exchange rate risks to an acceptable level based on management's judgment of the appropriate trade-off between risk, opportunity, and cost, this hedging program does not completely eliminate the effects of currency exchange rate fluctuations. In addition, currency hedging may result in a reduction or increase in revenue should the currency strengthen or decline during the contract period. A discussion of the hedging program is contained in Item 7A, Quantitative and Qualitative Disclosures about Market Risk in our Annual Report on Form 10-K for the year ended December 31, 2019. Additional information on our hedging arrangements is also contained in Note 4 – Fair value measurements in the notes to our audited consolidated financial statements in this Annual Report on Form 10-K.

We rely on shipping providers to deliver products to our customers globally. Labor, tariff, or World Trade Organization-related disputes, piracy, physical damage to shipping facilities or equipment caused by severe weather or terrorist incidents, congestion at shipping facilities, inadequate equipment to load, dock, and offload our products, energy-related tie-ups, or other factors could disrupt or delay shipping or offloading of our products domestically and internationally. Such disruptions or delays may have an adverse effect on our financial condition and results of operations.

Failure to comply with anti-bribery, anti-corruption, and anti-money laundering laws, including the U.S. Foreign Corrupt Practices Act of 1977, as amended, or the FCPA, and similar laws associated with our activities outside of the United States could subject us to penalties and other adverse consequences.

We are subject to the FCPA, the U.S. domestic bribery statute contained in 18 U.S.C. § 201, the U.S. Travel Act, the USA PATRIOT Act, the United Kingdom Bribery Act of 2010 and possibly other anti-corruption, anti-bribery and anti-money laundering laws in the more than forty countries around the world where we conduct activities and sell our products. We face significant risks and liability if we fail to comply with the FCPA and other anti-corruption and anti-bribery laws that prohibit companies and their employees and third-party business partners, such as distributors or resellers, from authorizing, offering or providing, directly or indirectly, improper payments or benefits to foreign government officials, political parties or candidates, employees of public international organizations including healthcare professionals, or private-sector recipients for the corrupt purpose of obtaining or retaining business, directing business to any person, or securing any advantage.

We leverage various third parties to sell our products and conduct our business abroad. We, our distributors and channel partners, and our other third-party intermediaries and manufacturer may have direct or indirect interactions with officials and employees of government agencies or state-owned or affiliated entities (such as in the context of obtaining government approvals, registrations, or licenses) and may be held liable for the corrupt or other illegal activities of these third-party business partners and intermediaries, our employees, representatives, contractors, partners, and agents, even if we do not explicitly authorize such activities. In many foreign countries, particularly in countries with developing economies, it may be a local custom that businesses engage in practices that are prohibited by the FCPA or other applicable laws and regulations. We provide training to all employees, including management, to ensure compliance with the FCPA. As such, we intend to continue to implement an FCPA/anti-corruption compliance program to ensure compliance with such laws but cannot assure you that all of our employees and agents, as well as those companies to which we outsource certain of our business operations, will not take actions in violation of our policies and applicable law, for which we have to defend ourselves and may be ultimately held responsible.

Any violation of the FCPA, other applicable anti-bribery, anti-corruption laws, and anti-money laundering laws could result in whistleblower complaints, adverse media coverage, investigations, loss of export privileges, severe criminal or civil sanctions and, in the case of the FCPA, suspension or debarment from U.S. government contracts, which could have a material and adverse effect on our reputation, business, operating results and prospects. In addition, responding to any enforcement action or related investigation may result in a materially significant diversion of management's attention and resources and significant defense costs and other professional fees.

If we fail to comply with U.S. export control and economic sanctions or fail to expand and maintain an effective sales force or successfully develop our international distribution network, our business, financial condition and results of operations may be adversely affected.

We currently derive the majority of our revenue from rentals or sales generated from our own direct sales force. Failure to maintain or expand our direct sales force could adversely affect our financial condition and results of operations. Additionally, we use international distributors to augment our sales efforts, certain of which are exclusive distributors in certain foreign countries. We cannot assure you that we will be able to successfully retain or develop our relationships with third-party distributors internationally. In addition, we are subject to United States export control and economic sanctions laws relating to the sale of our products, the violation of which could result in substantial penalties being imposed against us. In particular, we have secured annual export licenses from the U.S. Treasury Department's Office of Foreign Assets Control to sell our products to a distributor and hospital and clinic end-users in Iran. The use of this license requires us to observe strict conditions with respect to products sold, end-user limitations and payment requirements. Although we believe we have maintained compliance with license requirements, there can be no assurance that the license will not be revoked, be renewed in the future or that we will remain in compliance. More broadly, if we fail to comply with export control laws or successfully develop our relationship with international distributors, our sales could fail to grow or could decline, and our ability to grow our business could be adversely affected. Distributors that are in the business of selling other medical products may not devote a sufficient level of resources and support required to generate awareness of our products and grow or maintain product sales. If our distributors are unwilling or unable to market and sell our products, or if they do not perform to our expectations, we could experience delayed or reduced market acceptance and sales of our products resulting in adverse results of operations.

We may be subject to substantial warranty or product liability claims or other litigation in the ordinary course of business that may adversely affect our business, financial condition and results of operations.

As manufacturers of medical devices, we may be subject to substantial warranty or product liability claims or other litigation in the ordinary course of business that may require us to make significant expenditures to defend these claims or pay damage awards. For example, our Inogen One systems contain lithium ion batteries, which, under certain circumstances, can be a fire hazard. We, as well as our key suppliers, maintain product liability insurance, but this insurance is limited in amount and subject to significant deductibles. There is no guarantee that insurance will be available or adequate to protect against all claims. Our insurance policies are subject to annual renewal and we may not be able to obtain liability or product insurance in the future on acceptable terms or at all. In addition, our insurance premiums could be subject to increases in the future, which may be material. If the coverage limits are inadequate to cover our liabilities or our insurance costs continue to increase as a result of warranty or product liability claims or other litigation, then our business, financial condition and results of operations may be adversely affected.

We may also be subject to other types of claims arising from our normal business activities. These may include claims, suits, and proceedings involving labor and employment, wage and hour, commercial, alleged securities laws violations or other investor claims, patent defense and other matters. The outcome of any litigation, regardless of its merits, is inherently uncertain. Any claims and lawsuits, and the disposition of such claims and lawsuits, could be time-consuming and expensive to resolve, divert management attention and resources, and lead to attempts on the part of other parties to pursue similar claims. Any adverse determination related to litigation could require us to change our technology or our business practices, pay monetary damages or enter into royalty or licensing arrangements, which could adversely affect our business, financial condition and results of operations.

Increases in our operating costs could have a material adverse effect on our business, financial condition and results of operations.

Reimbursement rates are established by fee schedules mandated by Medicare, private payors and Medicaid, and are likely to remain constant or decrease due, in part, to federal and state government budgetary constraints. As a result, with respect to Medicare and Medicaid related revenue, we are not able to offset the effects of general inflation on our operating costs through increases in prices for our products. In particular, labor and related costs account for a significant portion of our operating costs and we compete with other healthcare providers to attract and retain qualified or skilled personnel and with various industries for administrative and service employees. This competitive environment could result in increased labor costs. As such, we must control our operating costs, particularly labor and related costs and failing to do so could adversely affect our financial condition and results of operations.

We depend on the services of our senior executives and other key technical personnel, the loss of whom could negatively affect our business.

Our success depends upon the skills, experience and efforts of our senior executives and other key technical personnel, including certain members of our engineering, accounting and compliance staff as well as our sales and marketing personnel. Much of our corporate expertise is concentrated in relatively few employees, the loss of which for any reason could negatively affect our business. Competition for our highly skilled employees is intense and we cannot prevent the resignation of any employee. We do not maintain “key man” life insurance on any of our senior executives. None of our senior executive team is bound by written employment contracts to remain with us for a specified period. In addition, we have not entered into non-compete agreements with members of our executive management team. The loss of any member of our executive management team could harm our ability to implement our business strategy and respond to the market conditions in which we operate.

We and our vendors and service providers rely on information technology networks and systems, and if we are unable to protect against service interruptions, data corruption, cybersecurity risks, data security incidents and/or network security breaches, our operations could be disrupted and our business could be negatively affected.

We rely on information technology networks and systems to process, transmit and store electronic, customer, operational, compliance, and financial information; to coordinate our business; and to communicate within our company and with customers, suppliers, partners and other third-parties. These information technology networks and systems may be susceptible to damage, disruptions or shutdowns, hardware or software failures, power outages, computer viruses, cybersecurity risks, data security incidents, telecommunication failures, user errors or catastrophic events. Like other companies, we have experienced data security incidents before. For example, on April 13, 2018, we announced that messages within an employee email account were accessed by unknown persons outside of our company without authorization. Some of the messages and attached files in that email account contained personal information belonging to our rental customers. We immediately took steps to secure customer information and hired a leading forensics firm to investigate the incident and to bolster our security. The unauthorized access of the potentially impacted email account appears to have occurred between January 2, 2018 and March 14, 2018. We notified approximately 30,000 current and former rental customers of this incident as well as the applicable regulatory authorities. We also provided resources, including credit monitoring and an insurance reimbursement policy, to assist all potentially affected individuals. We have incurred remedial, legal and other costs in connection with this incident. We have insurance coverage in place for certain potential liabilities and costs relating to service interruptions, data corruption, cybersecurity risks, data security incidents and/or network security breaches, but this insurance is limited in amount, subject to a deductible, and may not be adequate to cover us for all costs arising from these incidents.

If our information technology networks and systems suffer unauthorized access, severe damage, disruption or shutdown, and our business does not effectively identify or resolve the issues in a timely manner, our operations could be disrupted, we could be subject to regulatory and consumer lawsuits and our business could be negatively affected. In addition, cybersecurity risks and data security incidents could lead to potential unauthorized access to or acquisition of confidential information (including protected health information), and data loss and corruption. There is no assurance that we will not experience service interruptions, security breaches, cyber security risks and data security incidents, or other information technology failures in the future.

The methods used to obtain unauthorized access, disable or degrade service or sabotage systems are constantly evolving and may be difficult to anticipate or to detect for long periods of time. As a result of these types of risks and attacks, we have implemented and periodically review and update systems, processes, and procedures to protect against unauthorized access to or use of data and to prevent data loss. For example, we have increased the security of our systems by requiring all email users to change their passwords following our recent data security incident and sooner than they would have otherwise been required to. We also implemented multi-factor authentication for remote email access and have taken additional steps to further limit access to our systems. However, the ever-evolving threats mean we and our third-party service providers and vendors must continually evaluate and adapt our respective systems and processes and overall security environment. There is no guarantee that these measures will be adequate to safeguard against all data security breaches, system compromises or misuses of data.

The compromise of our technology systems resulting in the loss, disclosure, misappropriation of, or access to, customers’, employees’ or business partners’ information or failure to comply with regulatory or contractual obligations with respect to such information could result in legal claims or proceedings, liability or regulatory penalties under laws protecting the privacy of personal information, disruption to our operations and damage to our reputation, any or all of which could adversely affect our business. The costs to remediate breaches and similar system compromises that do occur could adversely affect our results of operations.

Any new laws, regulations, other legal obligations or industry standards, or any changed interpretation of existing laws, regulations or other standards may require us to incur additional costs and restrict our business operations. For example, many jurisdictions have enacted laws requiring companies to notify individuals of data security breaches involving certain types of personal data. These mandatory disclosures regarding a security breach could result in negative publicity to us, which may cause our customers to lose confidence in the effectiveness of our data security measures which could adversely affect our business, financial condition and results of operations.

Increasing data privacy regulations could impact our business and expose us to increased liability.

We must comply with increasingly complex and rigorous regulatory standards enacted to protect business and personal data in the U.S., Europe and elsewhere. For example, the European Union adopted the GDPR, which became effective on May 25, 2018. The GDPR imposes additional obligations on companies regarding the processing of personal data and provides certain individual privacy rights to natural persons whose data is stored. Compliance with existing, proposed and recently enacted laws (including implementation of the privacy and process enhancements called for under the GDPR) and regulations can be costly and any failure to comply with these regulatory standards could subject us to legal and reputational risks. In addition, we are required under the GDPR to respond to customers' Subject Access Reports (SARs) within a certain time period, which entails determining what personal data is being processed, the purpose of any such data processing, to whom such personal data has been disclosed and whether personal data is being disclosed for the purpose of making automated decisions relating to that customer. We may dedicate significant resources to responding to our customers' SARs, which could adversely affect our business, financial condition and results of operations. Misuse of or failure to secure or properly process personal information could also result in violation of data privacy laws and regulations, proceedings against the Company by governmental entities or others, damage to our reputation and credibility and could have a negative impact on revenues and profits. As the regulatory environment related to information security, data collection and use, and privacy becomes increasingly rigorous, with new and constantly changing requirements applicable to our business, compliance with those requirements could continue to result in significant costs.

Following the GDPR, a number of states in the U.S. have introduced bills, which, if passed, would impose operational requirements on U.S. companies similar to the requirements reflected in the GDPR. In 2018, California passed a privacy law (the "CCPA"), which gives consumers significant rights over the use of their personal information, including the right to object to the "sale" of their personal information. These rights may restrict our ability to use personal information in connection with our business operations. The CCPA also provides a private right of action for security breaches. Washington and Massachusetts have introduced significant privacy bills and Congress is debating federal privacy legislation, which if passed, may restrict our business operations and require us to incur additional costs for compliance.

Any new laws, regulations, other legal obligations or industry standards, or any changed interpretation of existing laws, regulations or other standards may require us to incur additional costs and restrict our business operations.

Our financial condition and results of operations may vary significantly from quarter-to-quarter due to a number of factors, which may lead to volatility in our stock price.

Our quarterly revenue and results of operations have varied in the past and may continue to vary significantly from quarter-to-quarter. This variability may lead to volatility in our stock price as research analysts and investors respond to these quarterly fluctuations. These fluctuations are due to numerous factors, including: fluctuations in consumer demand for our products; seasonal cycles in consumer spending; HME providers' ability to adopt and finance portable oxygen concentrator purchases and restructure their businesses to remove delivery expenses; our ability to design, manufacture and deliver products to our consumers in a timely and cost-effective manner; quality control problems in our manufacturing operations; our ability to timely obtain adequate quantities of the components used in our products; new product introductions and enhancements by us and our competitors; unanticipated increases in costs or expenses; declines in sales personnel productivity; increased marketing cost per generated lead; unanticipated regulatory reimbursement changes that could result in positive or negative impacts to our earnings; changes or updates to generally accepted accounting principles; additional legal costs associated with pending legal matters; and fluctuations in foreign currency exchange rates. As more HME providers adopt portable oxygen concentrators in their businesses, we expect that this could change our historical seasonality in the domestic business-to-business channel as well, which was previously influenced mainly by consumer buying patterns. The foregoing factors are difficult to forecast, and these, as well as other factors, could materially and adversely affect our quarterly and annual results of operations. We have experienced significant revenue growth in the past, but we may not achieve similar growth rates, profit margins and/or net income in future periods. You should not rely on our operating results for any prior quarterly or annual period as an indication of our future operating performance. If we are unable to maintain adequate revenue growth and cost control, our operating results could suffer, and our stock price could decline, primarily because a significant amount of our expenses are fixed and would take additional time to reduce. Any failure to adjust spending quickly enough to compensate for a revenue shortfall could magnify the adverse impact of such revenue shortfall on our results of operations. Our results of operations may not meet the expectations of research analysts or investors, in which case the price of our common stock could decrease significantly.

Given our levels of stock-based compensation, our tax rate may vary significantly depending on our stock price.

The tax effects of the accounting for share-based compensation may significantly impact our effective tax rate from period to period. In periods in which our stock price is higher than the grant price of the stock-based compensation vesting in that period, we will recognize excess tax benefits that will decrease our effective tax rate. For example, in the year ended December 31, 2019 excess tax benefits recognized from stock-based compensation decreased our provision for income taxes by \$0.5 million and our effective tax rate by 2.0% as compared to the tax rate without such benefits. However, in periods in which our stock price may be lower than the grant price of the stock-based compensation vesting in that period, our effective tax rate may increase. The amount and value of stock-based compensation issued relative to our earnings in a particular period will also affect the magnitude of the impact of stock-based compensation on our effective tax rate. These tax effects are dependent on our stock price and employee stock option exercises, which we do not control, and a decline in our stock price could significantly increase our effective tax rate and adversely affect our results of operations.

If the market opportunities for our products are smaller than we believe they are, our revenues may be adversely affected and our business may suffer.

Our projections regarding (i) the size of the oxygen therapy and NIV markets, both in the United States and internationally, (ii) the size and percentage of the long-term oxygen therapy market and NIV market that is subject to competitive bidding in the United States, (iii) the number of oxygen therapy and NIV patients, (iv) the number of patients requiring ambulatory and stationary oxygen, (v) the number of patients who rely on the delivery model, (vi) the percentage of the long-term oxygen therapy and NIV markets serviced by Medicare, Medicare Advantage, and other third party-payors, (vii) the size of the retail long-term oxygen therapy market and how the opportunity may change as portable oxygen concentrator penetration increases, (viii) the share of portable oxygen concentrators as a percentage of the total oxygen therapy spend, and (ix) the size of the early-stage COPD market and the interest and clinical benefit of NIV technology to this patient population are based on estimates that we believe are reliable. These estimates may prove to be incorrect, new data or studies may change the estimated incidence or prevalence of patients requiring long-term oxygen therapy or NIV therapy, or the type of long-term oxygen therapy patients. The number of patients in the United States and internationally may turn out to be lower than expected, patients may not be otherwise amenable to treatment with our products, or new patients may become increasingly difficult to identify or gain access to, all of which would adversely affect our results of operations and our business.

An adverse outcome of a sales and use tax audit could have a material adverse effect on our results of operations and financial condition.

We operate in multiple taxing jurisdictions and certain revenue streams may be subject to sales and use tax. Any changes, ambiguity, or uncertainty in taxing jurisdictions' administrative interpretations, decisions, policies and positions, including, the position of taxing authorities with respect to taxability of our revenue also materially impact our sales and use tax liabilities. The California State Board of Equalization conducted a sales and use tax audit of our operations in California in 2008. As a result of the audit, the California State Board of Equalization confirmed that our sales are not subject to California sales and use tax. We believe that our sales in three states may be subject to sales and use tax, but in other states they should be exempt from sales and use tax. There can be no assurance, however, that other states may agree with our position and we may be subject to an audit that may not be resolved in our favor. Such an audit could be expensive and time-consuming and result in substantial management distraction. If the matter were to be resolved in a manner adverse to us, it could have a material adverse effect on our results of operations and financial condition.

Changes in accounting principles, or interpretations thereof, could have a significant effect on our financial condition and results of operations.

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America, referred to as U.S. GAAP. These principles are subject to interpretation by the Securities and Exchange Commission (SEC) and various bodies formed to interpret and create appropriate accounting principles. A change in these principles can have a significant effect on our reported results and may even retroactively affect previously reported transactions. Additionally, the adoption of new or revised accounting principles may require that we make significant changes to our systems, processes and controls.

For example, the U.S.-based Financial Accounting Standards Board, referred to as FASB, is currently working together with the International Accounting Standards Board, referred to as IASB, on several projects to further align accounting principles and facilitate more comparable financial reporting between companies who are required to follow U.S. GAAP under SEC regulations and those who are required to follow International Financial Reporting Standards outside of the United States. These efforts by the FASB and IASB may result in different accounting principles under U.S. GAAP that may result in materially different financial results for us in areas including, but not limited to, principles for recognizing revenue and lease accounting. Additionally, significant changes to U.S. GAAP

resulting from the FASB's and IASB's efforts may require that we change how we process, analyze and report financial information and that we change financial reporting controls.

It is not clear if or when these potential changes in accounting principles may become effective, whether we have the proper systems and controls in place to accommodate such changes and the impact that any such changes may have on our financial condition and results of operations.

Our ability to use net operating losses to offset future taxable income may be subject to certain limitations.

Utilization of our net operating losses and tax credit carryforwards may be subject to annual limitations arising from ownership change limitations imposed by the Internal Revenue Code and similar state provisions. Such annual limitations could result in the expiration of our net operating losses and tax credit carryforwards before their utilization.

Changes in tax laws or tax rulings could materially affect our financial condition, results of operations, and cash flows.

Current economic and political conditions make tax laws and regulations, or their interpretation and application, in any jurisdiction subject to significant change. Changes in tax law or tax rulings, or changes in interpretations of existing law, could adversely affect our financial condition and results of operations. For example, changes to the U.S. tax laws enacted in December 2017 had a significant impact on our deferred tax assets, income tax provision and effective tax rate for the year ended December 31, 2017. In addition, many countries in Europe, as well as a number of other countries and organizations, have recently proposed or recommended changes to existing tax laws or have enacted new laws that could significantly increase our tax obligations in many countries where we do business or require us to change the manner in which we operate our business.

Risks related to the regulatory environment

We are subject to extensive federal and state regulation, and if we fail to comply with applicable regulations, we could suffer severe criminal or civil sanctions and be required to make significant changes to our operations that could adversely affect our business, financial condition and results of operations.

The federal government and all states in which we currently operate regulate various aspects of our business. In particular, our operations are subject to state laws governing, among other things, distribution of medical equipment and certain types of home health activities, and we are required to obtain and maintain licenses in many states to act as a durable medical equipment supplier. Certain of our employees are subject to state laws and regulations governing the professional practices of respiratory therapy.

As a healthcare provider participating in governmental healthcare programs, we are subject to laws directed at preventing fraud and abuse, which subject our marketing, billing, documentation and other practices to strict government scrutiny. To ensure compliance with Medicare, Medicaid and other regulations, government agencies or their contractors often conduct routine audits and request customer records and other documents to support our claims submitted for payment of services rendered. Government agencies or their contractors also periodically open investigations and obtain information from healthcare providers. Violations of federal and state regulations can result in severe criminal, civil and administrative fines, penalties and sanctions, including debarment, suspension or exclusion from Medicare, Medicaid and other government reimbursement programs, any of which would have a material adverse effect on our business.

Changes in healthcare laws and regulations and new interpretations of existing laws and regulations may affect permissible activities, the relative costs associated with doing business, and reimbursement amounts paid by federal, state and other third-party payors. There have been and will continue to be regulatory initiatives affecting our business and we cannot predict the extent to which future legislation and regulatory changes could have a material adverse effect on our business.

We are subject to significant regulation by numerous government agencies, including the U.S. Food and Drug Administration, or FDA. We cannot market or commercially distribute our products without obtaining and maintaining necessary regulatory clearances or approvals.

Our products are medical devices subject to extensive regulation in the United States and in the foreign markets where we distribute our products. The FDA and other U.S. and foreign governmental agencies regulate, among other things, with respect to medical devices:

- design, development and manufacturing;
- testing, labeling, content and language of instructions for use and storage;

- clinical trials;
- product safety;
- marketing, sales and distribution;
- pre-market clearance and approval;
- record keeping;
- advertising and promotion;
- recalls and field safety corrective actions;
- post-market surveillance, including reporting of deaths or serious injuries and malfunctions that, if they were to recur, could lead to death or serious injury;
- post-market approval studies; and
- product import and export.

Before we can market or sell a medical device in the United States, we must obtain either 510(k) clearance from the FDA, clearance under the de novo process or approval of a pre-market approval application from the FDA, unless an exemption applies. In the 510(k) clearance process, the FDA must determine that a proposed device is “substantially equivalent” to a device legally on the market, known as a “predicate” device, with respect to intended use, technology and safety and effectiveness, in order to clear the proposed device for marketing.

Our commercial products have received 510(k) clearance by the FDA. If the FDA requires us to go through a lengthier, more rigorous examination for future products or modifications to existing products than we had expected, our product introductions or modifications could be delayed or canceled, which could cause our sales to decline. In addition, the FDA may determine that future products will require the more costly, lengthy and uncertain pre-market approval process. Although we do not currently market any devices under a pre-market approval, the FDA may demand that we obtain a pre-market approval prior to marketing certain future products. In addition, if the FDA disagrees with our determination that a product we currently market is subject to an exemption from pre-market review, the FDA may require us to submit a 510(k), de novo application or pre-market approval application in order to continue marketing the product. Further, even with respect to those future products where a pre-market approval is not required, we cannot assure you that we will be able to obtain the 510(k) clearances with respect to those products or do so in a timely fashion.

The FDA can delay, limit or deny clearance or approval of a device for many reasons, including:

- we may not be able to demonstrate to the FDA’s satisfaction that our products are safe and effective for their intended uses;
- the data from our pre-clinical studies and clinical trials may be insufficient to support clearance or approval, where required; and
- the manufacturing process or facilities we use may not meet applicable Quality System Regulations.

Medical devices may only be promoted and sold for the indications for which they are approved or cleared. In addition, even if the FDA has approved or cleared a product, it can take action affecting such product approvals or clearances if serious safety or other problems develop in the marketplace. Delays in obtaining clearances or approvals could adversely affect our ability to introduce new products or modifications to our existing products in a timely manner, which would delay or prevent commercial sales of our products. Additionally, the FDA and other regulatory authorities have broad enforcement powers. Regulatory enforcement or inquiries, or other increased scrutiny on us, could affect the perceived safety and performance of our products and dissuade our customers from using our products.

If we modify our FDA cleared devices, we may need to seek additional clearances or approvals, which, if not granted, would prevent us from selling our modified products.

Any modification we make to our products that could significantly affect their safety or effectiveness, or would constitute a major change in intended use, manufacture, design, materials, labeling, or technology requires the submission and clearance of a new 510(k) pre-market notification, a de novo application or, possibly, pre-market approval. The FDA requires every manufacturer to make this determination in the first instance, but the FDA may review and disagree with any manufacturer’s decision. The FDA may not agree with our decisions regarding whether new clearances or approvals are necessary. We have modified some of our 510(k) cleared products and have determined that in certain instances new 510(k) clearances or pre-market approval are not required. If the

FDA disagrees with our determination and requires us to submit new 510(k) notifications or pre-market approval for modifications to our previously cleared products for which we have concluded that new clearances or approvals are unnecessary, we may be required to cease marketing or to recall the modified product until we obtain clearance or approval, and we may be subject to significant regulatory fines or penalties.

If we fail to comply with FDA or state regulatory requirements, we can be subject to enforcement action.

Even after we have obtained regulatory clearance or approval to market a product, we have ongoing responsibilities under FDA regulations. The FDA and state authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA or state agencies, which may include any of the following sanctions:

- adverse publicity, warning letters, fines, injunctions, consent decrees and civil penalties;
- recalls, termination of distribution, or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- delays in the introduction of products into the market;
- refusal to grant our requests for future 510(k) clearances or approvals of new products, new intended uses, or modifications to existing products;
- withdrawals or suspensions of current 510(k) clearances or approvals, resulting in prohibitions on sales of our products; and
- criminal prosecution.

Any of these sanctions could result in higher than anticipated costs or lower than anticipated sales and have a material adverse effect on our reputation, business, results of operations and financial condition.

A recall of our products, either voluntarily or at the direction of the FDA or another governmental authority, or the discovery of serious safety issues with our products that leads to corrective actions, could have a significant adverse effect on us.

The FDA and similar foreign governmental authorities have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design, labeling or manufacture of a product or in the event that a product poses an unacceptable risk to health. Manufacturers may also, under their own initiative, recall a product if any material deficiency in a device is found or withdraw a product to improve device performance or for other reasons. Similar regulatory agencies in other countries have similar authority to recall devices because of material deficiencies or defects in design or manufacture that could endanger health. A government-mandated or voluntary recall by us or one of our distributors could occur as a result of an unacceptable risk to health, component failures, manufacturing errors, design or labeling defects or other deficiencies and issues. Any recall would divert management attention and financial resources, could cause the price of our stock to decline and expose us to product liability or other claims and harm our reputation with customers. A recall involving our Inogen concentrators could be particularly harmful to our business, financial condition and results of operations.

We are required to timely report to the FDA any incident in which our product may have caused or contributed to a death or serious injury or in which our product malfunctioned and, if the malfunction were to recur, would likely cause or contribute to death or serious injury. Repeated product malfunctions may result in a voluntary or involuntary product recall. Depending on the corrective action we take to redress a product's deficiencies or defects, the FDA may require, or we may decide, that we will need to obtain new approvals or clearances for the device before we may market or distribute the corrected device. Seeking such approvals or clearances may delay our ability to replace the recalled devices in a timely manner. Moreover, if we do not adequately address problems associated with our devices, we may face additional regulatory enforcement action, including adverse publicity, FDA warning letters, product seizure, injunctions, administrative penalties, or civil or criminal fines. We may also be required to bear other costs or take other actions that may have a negative impact on our sales as well as face significant adverse publicity or regulatory consequences, which could harm our business, including our ability to market our products in the future.

Any adverse event involving our products, whether in the United States or abroad, could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection, mandatory recall or other enforcement action. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, will require the dedication of our time and capital, distract management from operating our business and may harm our reputation and results of operations.

If we, our contract manufacturer, or our component manufacturers fail to comply with the FDA's Quality System Regulation, our manufacturing operations could be interrupted, and our product sales and operating results could suffer.

We, our contract manufacturer, and our component manufacturers are required to comply with the FDA's Quality System Regulation, or QSR, which covers the procedures and documentation of the design, calibration, testing, production, control, quality assurance, labeling, packaging, storage and shipping of our devices. The FDA audits compliance with the QSR through periodic announced and unannounced inspections of manufacturing and other facilities. We and our component manufacturers have been, and anticipate in the future being, subject to such inspections. Although we believe our manufacturing facilities and those of our component manufacturers are in compliance with the QSR, we cannot provide assurance that any future inspection will not result in adverse findings. If we fail to implement timely and appropriate corrective actions that are acceptable to the FDA or if our other manufacturing facilities or those of any of our component manufacturers, contract manufacturers, or suppliers are found to be in violation of applicable laws and regulations, or we or our manufacturers or suppliers fail to take prompt and satisfactory corrective action in response to an adverse inspection, the FDA could take enforcement action, including any of the following sanctions:

- adverse publicity, untitled letters, warning letters, fines, injunctions, consent decrees and civil penalties;
- customer notifications or repair, replacement, refunds, recall, detention or seizure of our products;
- operating restrictions or partial suspension or total shutdown of production;
- refusing or delaying our requests for 510(k) clearance or pre-market approval of new products or modified products;
- withdrawing 510(k) clearances or pre-market approvals that have already been granted;
- refusal to grant export approval for our products; or
- criminal prosecution.

Any of these sanctions could adversely affect our business, financial condition and results of operations.

Outside the United States, our products and operations are also often required to comply with standards set by industrial standards bodies, such as the International Organization for Standardization, or ISO. Foreign regulatory bodies may evaluate our products or the testing that our products undergo against these standards. The specific standards, types of evaluation and scope of review differ among foreign regulatory bodies. If we fail to adequately comply with any of these standards, a foreign regulatory body may take adverse actions similar to those within the power of the FDA. Any such action may harm our reputation and could have an adverse effect on our business, results of operations and financial condition.

The primary regulatory body in Europe is the European Commission, which includes most of the major countries in Europe. The European Commission has adopted numerous directives and standards regulating the design, manufacture, clinical trial, labeling and adverse event reporting for medical devices. Devices that comply with the requirements of a relevant directive will be entitled to bear the CE conformity marking, indicating that the device conforms to the essential requirements of the applicable directives and, accordingly, can be commercially distributed throughout Europe. The method of assessing conformity varies depending on the class of the product, but normally involves a combination of self-assessment by the manufacturer and a third-party assessment by a "Notified Body." An assessment by a Notified Body of one country within the European Union is required in order for a manufacturer to commercially distribute the product throughout the European Union.

If we fail to obtain and maintain regulatory approval in foreign jurisdictions, our market opportunities will be limited.

Approximately 21.5% and 21.6%, and 22.3% of our total revenue was from sales outside of the United States for the years ended December 31, 2019, 2018, and 2017, respectively. We sell our products in 46 countries outside of the United States through our wholly owned subsidiary, distributors or directly to large "house" accounts. In order to market our products in the European Union or other foreign jurisdictions, we must obtain and maintain separate regulatory approvals and comply with numerous and varying regulatory requirements. The approval procedure varies from country to country and can involve additional product testing. The time required to obtain approval abroad may be longer than the time required to obtain FDA clearance.

For example, the European Union requires that manufacturers of medical devices obtain the right to bear the "CE" conformity marking which designates compliance with existing directives and standards regulating the design, manufacture and distribution of

medical devices in member countries of the European Union. In 2017, the European Union adopted the EU Medical Device Regulation (Council Regulations 2017/745) which imposes stricter requirements for the marketing and sale of medical devices, including new clinical evaluation, quality system, and post-market surveillance requirements. The regulation has a three-year implementation period, with full application of the regulation to occur in May 2020 and will replace the existing directives on medical devices in the European Union. After May 2020, medical devices marketed in the European Union will require certification according 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 May 2024. Only medical devices that comply with certain conformity requirements of the Medical Device Directive are allowed to be marketed within the European Union. The company's products will be required to comply with the European Medical Device Regulation (MDR). Products that fail to be certified with the MDR may not be marketed or sold in the European Union.

The foreign regulatory approval process, including with respect to MDR, includes many of the risks associated with obtaining FDA clearance and we may not obtain foreign regulatory approvals on a timely basis, if at all. FDA clearance does not ensure approval by regulatory authorities in other countries, and approval by one foreign regulatory authority does not ensure approval by regulatory authorities in other foreign countries. However, the failure to obtain clearance or approval in one jurisdiction may have a negative impact on our ability to obtain clearance or approval elsewhere. If we do not obtain or maintain necessary approvals to commercialize our products in markets outside the United States, we may be required to discontinue sales in those countries which would negatively affect our overall market penetration, revenues, results of operations and financial condition.

We are subject to burdensome and complex billing and record-keeping requirements in order to substantiate our claims for payment under federal, state and commercial healthcare reimbursement programs, and our failure to comply with existing requirements, or changes in those requirements or interpretations thereof, could adversely affect our business, financial condition and results of operations.

We are subject to burdensome and complex billing and record-keeping requirements in order to substantiate our claims for payment under federal, state and commercial healthcare reimbursement programs. Our records also are subject to routine and other reviews by third-party payors, which can result in delays in payments or refunds of paid claims. We could experience a significant increase in pre-payment reviews of our claims by the Durable Medical Equipment Medicare Administrative Contractors, which could cause substantial delays in the collection of our Medicare accounts receivable as well as related amounts due under supplemental insurance plans.

Current law provides for a significant expansion of the government's auditing and oversight of suppliers who care for patients covered by various government healthcare programs. Examples of this expansion include audit programs being implemented by the Durable Medical Equipment Medicare Administrative Contractors, the Zone Program Integrity Contractors, the Recovery Audit Contractors, and the Comprehensive Error Rate Testing contractors, operating under the direction of CMS, and the various state Medicaid Fraud Control Units.

We have been informed by these auditors that healthcare providers and suppliers of certain durable medical equipment product categories are expected to experience further increased scrutiny from these audit programs. When a government auditor ascribes a high billing error rate to one or more of our locations, it generally results in protracted pre-payment claims review, payment delays, refunds and other payments to the government and/or our need to request more documentation from providers than has historically been required. It may also result in additional audit activity in other company locations or Durable Medical Equipment Medicare Administrative Contractors jurisdiction. We cannot currently predict the adverse impact that these audits, methodologies and interpretations might have on our business, financial condition or results of operations, but such impact could be material.

We may be subject to fines, penalties or injunctions if we are determined to be promoting the use of our products for unapproved or "off-label" uses, resulting in damage to our reputation and business.

Our promotional materials and training methods must comply with the FDA and other applicable laws and regulations, including the prohibition of the promotion of a medical device for a use that has not been cleared or approved by the FDA. Physicians may use our products off-label, as the FDA does not restrict or regulate a physician's choice of treatment within the practice of medicine. If the FDA determines that our promotional materials or training constitutes promotion of an off-label use that is either false or misleading, it could request that we modify our training or promotional materials or subject us to regulatory or enforcement actions, which could have an adverse effect on our reputation and results of operations.

Failure to comply with the Federal Health Insurance Portability and Accountability Act of 1996, or HIPAA, the Health Information Technology for Economic and Clinical Health Act, or HITECH Act, and implementing regulations could result in significant penalties.

Numerous federal and state laws and regulations, including HIPAA and the HITECH Act, govern the collection, dissemination, security, use and confidentiality of patient-identifiable health information. HIPAA and the HITECH Act require us to comply with standards for the use and disclosure of protected health information within our company and with third parties. The Privacy Standards and Security Standards under HIPAA establish a set of basic national privacy and security standards for the protection of individually identifiable health information by health plans, healthcare clearinghouses and certain healthcare providers, referred to as covered entities, and the business associates with whom such covered entities contract for services. Notably, whereas HIPAA previously directly regulated only these covered entities, the HITECH Act, which was signed into law as part of the stimulus package in February 2009, makes certain of HIPAA's privacy and security standards also directly applicable to covered entities' business associates. As a result, both covered entities and business associates are now subject to significant civil and criminal penalties for failure to comply with Privacy Standards and Security Standards.

HIPAA requires healthcare providers like us to develop and maintain policies and procedures with respect to protected health information that is used or disclosed, including the adoption of administrative, physical and technical safeguards to protect such information from unauthorized disclosure. The HITECH Act expands the notification requirement for breaches of patient-identifiable health information, restricts certain disclosures and sales of patient-identifiable health information and provides a tiered system for civil monetary penalties for HIPAA violations. The HITECH Act also increased the civil and criminal penalties that may be imposed against covered entities, business associates and possibly other persons and gave state attorneys general new authority to file civil actions for damages or injunctions in federal courts to enforce the federal HIPAA laws and seek attorney fees and costs associated with pursuing federal civil actions. Additionally, certain states have adopted comparable privacy and security laws and regulations, some of which may be more stringent than HIPAA.

If we are determined to be out of compliance with existing or new laws and regulations related to patient health information, we could be subject to criminal or civil sanctions. New health information standards, whether implemented pursuant to HIPAA, the HITECH Act, congressional action or otherwise, could have a significant effect on the manner in which we handle healthcare related data and communicate with payors, and the cost of complying with these standards could be significant.

The 2013 final HITECH omnibus rule modifies the breach reporting standard in a manner that will likely make more data security incidents qualify as reportable breaches. Any liability from a failure to comply with the requirements of HIPAA or the HITECH Act could adversely affect our results of operations and financial condition. The costs of complying with privacy and security related legal and regulatory requirements are burdensome and could have a material adverse effect on our results of operations.

Regulations requiring the use of "standard transactions" for healthcare services issued under HIPAA may negatively affect our profitability and cash flows.

Pursuant to HIPAA, final regulations have been implemented to improve the efficiency and effectiveness of the healthcare system by facilitating the electronic exchange of information in certain financial and administrative transactions while protecting the privacy and security of the information exchanged.

The HIPAA transaction standards are complex, and subject to differences in interpretation by third-party payors. For instance, some third-party payors may interpret the standards to require us to provide certain types of information, including demographic information not usually provided to us by physicians. As a result of inconsistent application of transaction standards by third-party payors or our inability to obtain certain billing information not usually provided to us by physicians, we could face increased costs and complexity, a temporary disruption in accounts receivable and ongoing reductions in reimbursements and net revenue. In addition, requirements for additional standard transactions, such as claims attachments or use of a national provider identifier, could prove technically difficult, time-consuming or expensive to implement, all of which could harm our business.

If we fail to comply with state and federal fraud and abuse laws, including anti-kickback, Physician Self-Referral Law, false claims and anti-inducement laws, we could face substantial penalties and our business, results of operations and financial condition could be adversely affected.

The Federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving remuneration to induce the referral of an individual to a person for the furnishing of, or in return for purchasing, leasing, ordering, or arranging for or recommending the purchase, lease or order of any healthcare item or service reimbursable under Medicare, Medicaid, or other federal healthcare programs. Although there are a number of statutory exceptions and regulatory safe harbors protecting certain common activities from prosecution, the exceptions and safe harbors are drawn narrowly, and any remuneration to or from a prescriber or purchaser of healthcare products or services may be subject to scrutiny if it does not qualify for an exception or safe harbor. Our practices may not in all cases meet all of the criteria for safe harbor protection from anti-kickback liability. Failure to meet all requirements of a safe harbor is not determinative of a kickback issue but could subject the practice to increased scrutiny by the government.

The Physician Self-Referral Law, commonly known as the “Stark Law,” prohibits a physician from referring a patient to an entity with which the physician (or an immediate family member) has a financial relationship, for the furnishing of certain designated health services (DHS) for which payment may be made by Medicare, unless an exception applies. Violation of the Stark Law could result in denial of payment, disgorgement of reimbursements received under a non-compliant arrangement, civil penalties, and exclusion from Medicare, Medicaid or other federal healthcare programs. Although we believe that we have structured our provider arrangements to comply with current Stark Law requirements, regulatory authorities may determine otherwise.

The Federal False Claims Act prohibits any person from knowingly presenting or causing to be presented a false claim for payment to the federal government, or knowingly making or causing to be made a false statement to get a false claim paid. The majority of states also have statutes or regulations similar to the federal anti-kickback and self-referral laws and false claims laws, which apply to items or services, reimbursed under Medicaid and other state programs, or, in several states, apply regardless of payor. These false claims statutes allow any person to bring suit in the name of the government alleging false and fraudulent claims presented to or paid by the government (or other violations of the statutes) and to share in any amounts paid by the entity to the government in fines or settlement. Such suits, known as *qui tam* actions, have increased significantly in the healthcare industry in recent years. Sanctions under these federal and state laws may include civil monetary penalties, exclusion from federal and state healthcare programs, criminal fines and imprisonment. In addition, the recently enacted Patient Protection and Affordable Care Act, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes. A person or entity no longer needs to have actual knowledge of this statute or specific intent to violate it. In addition, the Patient Protection and Affordable Care Act provides that the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the false claims statutes. Because of the breadth of these laws and the narrowness of the safe harbors and exceptions, it is possible that some of our business activities could be subject to challenge under one or more of such laws. Such a challenge, regardless of the outcome, could have a material adverse effect on our business, business relationships, reputation, financial condition and results of operations.

The Patient Protection and Affordable Care Act also imposes annual public reporting and disclosure requirements on device and drug manufacturers for “transfers of value” made or distributed to licensed physicians and teaching hospitals. Device and drug manufacturers are also required to report and disclose annually any investment interests held by physicians and their immediate family members during the preceding calendar year. Failure to submit required ownership and investment interest information may result in civil monetary penalties of up to an aggregate of \$0.17 million per year (and up to an aggregate of \$1.128 million per year for “knowing failures”), for all payments, transfers of value or ownership or investment interests not reported in an annual submission.

In addition, there has been a recent trend of increased federal and state regulation of payments made to physicians. Certain states, mandate implementation of compliance programs and/or the tracking and reporting of gifts, compensation and other remuneration to physicians. The shifting compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance and/or reporting requirements in multiple jurisdictions increase the possibility that a healthcare company may violate one or more of the requirements.

The Federal Civil Monetary Penalties Law grants authority to the U.S. Department of Health & Human Services Office of Inspector General (OIG) to seek civil monetary penalties (CMPs) against an individual or entity based on a wide variety of conduct including violations of the Anti-Kickback Statute, Stark Law, and False Claims Act. An entity that offers to or transfers remuneration to any individual eligible for benefits under Medicare or Medicaid that such entity knows or should know is likely to influence such individual to order or receive from a particular provider, practitioner, or supplier any Medicare or Medicaid payable item or service may be liable for CMPs. We sometimes offer customers various discounts and other financial incentives in connection with the sales of our products. While it is our intent to comply with all applicable laws, the federal government may find that our marketing activities

violate the law. If we are found to be in non-compliance, we could be subject to CMPs of up to \$0.02 million for each wrongful act, assessment of three times the amount claimed for each item or service and exclusion from the federal or state healthcare programs.

On February 3, 2017, the Department of Justice (DOJ) published a final rule that applies an inflation adjustment to civil monetary penalty (CMP) amounts, as mandated by the Bipartisan Budget Act of 2015. The maximum CMP for False Claims Act violations is \$0.02 million for civil penalties assessed after August 1, 2016 and whose violations occurred after November 2, 2015.

The Bipartisan Budget Act of 2018 increases the CMP and criminal fines and sentences for various fraud and abuse violations under the Medicare and Medicaid programs for violations committed after February 9, 2018. The 2020 inflation adjusted CMP for a False Claims Act violation is approximately \$0.021 million for each false claim.

The scope and enforcement of each of these laws is uncertain and subject to rapid change in the current environment of healthcare reform, especially in light of the lack of applicable precedent and regulations. If our operations are found to be in violation of any of the laws described above or any other government regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restriction of our operations or exclusion from participation in the federal healthcare programs. Any penalties, damages, fines, curtailment or restructuring of our operations could harm our ability to operate our business and our results of operations. 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 operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state fraud laws may prove costly.

Foreign governments tend to impose strict price controls, which may adversely affect our future profitability.

We sell our products in 46 countries outside the United States through our wholly owned subsidiary, distributors or directly to large "house" accounts. In some foreign countries, particularly in the European Union, the pricing of medical devices is subject to governmental control. In these countries, pricing negotiations with governmental authorities can take considerable time after the receipt of marketing approval for a product. To obtain reimbursement or pricing approval in some countries, we may be required to supply data that compares the cost-effectiveness of our products versus other available therapies. If reimbursement of our products is unavailable or limited in scope or amount, or if pricing is set at unsatisfactory levels, it may not be profitable to sell our products in certain foreign countries, which would negatively affect the long-term growth of our business.

Our business activities involve the use of hazardous materials, which require compliance with environmental and occupational safety laws regulating the use of such materials. If we violate these laws, we could be subject to significant fines, liabilities or other adverse consequences.

Our research and development programs as well as our manufacturing operations involve the controlled use of hazardous materials. Accordingly, we are subject to international, federal, state and local laws governing the use, handling and disposal of these materials. Although we believe that our safety procedures for handling and disposing of these materials comply in all material respects with the standards prescribed by state and federal regulations of each country in which we conduct business, we cannot completely eliminate the risk of accidental contamination or injury from these materials. In the event of an accident or failure to comply with environmental laws, we could be held liable for resulting damages, and any such liability could exceed our insurance coverage and adversely affect our financial condition and results of operations.

Regulatory requirements under Proposition 65 could adversely affect our business.

We are subject to California's Proposition 65, or Prop 65, which requires a specific warning on any product that contains a substance listed by the State of California as having been found to cause cancer or birth defects, unless the level of such substance in the product is below a safe harbor level. Prop 65 required that all businesses must be in compliance by August 30, 2018 with new regulations that require modifications to product warnings and for businesses to coordinate with upstream vendors or downstream customers for the 800+ regulated chemicals in consumer products and assess whether new occupational exposure warnings need to be posited in California facilities. We have taken steps to add warning labels to our products packaged in California and manufactured after August 30, 2018. Although we cannot predict the ultimate impact of these new requirements, they could reduce overall consumption of our products or leave consumers with the perception (whether or not valid) that our products do not meet their health and wellness needs, all of which could adversely affect our business, financial condition and results of operations.

Risks related to our intellectual property

If we are unable to secure and maintain patent or other intellectual property protection for the intellectual property used in our products, we will lose a significant competitive advantage, which may adversely affect our future profitability.

Our commercial success depends, in part, on obtaining, defending, and maintaining patent and other intellectual property protection for the technologies used in our products. The patent positions of medical device companies, including ours, can be highly uncertain and involve complex and evolving legal and factual questions. Furthermore, we might in the future opt to license intellectual property from other parties. If we, or the other parties from whom we would license intellectual property, fail to obtain, defend, and maintain adequate patent or other intellectual property protection for intellectual property used in our products, or if any protection is reduced or eliminated, others could use the intellectual property used in our products, resulting in harm to our competitive business position. In addition, patent and other intellectual property protection may not:

- prevent our competitors from duplicating our products;
- prevent our competitors from gaining access to our proprietary information and technology;
- prevent our competitors from producing counterfeit products;
- prevent our competitors or other parties from suing us for alleged infringement; or
- permit us to gain or maintain a competitive advantage.

Any of our patents may be challenged, invalidated, circumvented or rendered unenforceable. We cannot provide assurance that we will be successful should one or more of our patents be challenged for any reason. If our patent claims are rendered invalid or unenforceable, or narrowed in scope, the patent coverage afforded our products could be impaired, which could make our products less competitive.

As of December 31, 2019, we have thirteen pending U.S. patent applications and fifteen pending international patent applications, forty-six issued patents relating to the design and construction of our oxygen concentrators, our intelligent delivery technology and our non-invasive ventilator, including its proprietary nasal interface. We cannot specify which of these patents individually or as a group will permit us to gain or maintain a competitive advantage. Patents may be subject to reexamination, *inter partes* review, post-grant review, and derivation proceedings in the U.S. Patent and Trademark Office or comparable proceedings in other patent offices worldwide. Foreign patents may be subject to opposition or comparable proceedings in the corresponding foreign patent offices. Any of these proceedings could result in loss of the patent or denial of the patent application, or loss or reduction in the scope of one or more of the claims of the patent or patent application. Changes in either patent laws or in interpretations of patent laws may also diminish the value of our intellectual property or narrow the scope of our protection. Interference, reexamination, *inter partes* review, defense, opposition and derivation proceedings may be costly and time consuming, and we, or the other parties from whom we might potentially license intellectual property, may be unsuccessful in defending against such proceedings. Thus, any patents that we own or might license may provide limited or no protection against competitors. In addition, our pending patent applications and those we may file in the future may have claims narrowed during prosecution or may not result in patents being issued. Even if any of our pending or future applications are issued, they may not provide us with any competitive advantage or adequate protection from allegations of infringement, whether valid or frivolous, which may result in the incurrence of material defense costs. Our patents and patent applications are directed to particular aspects of our products. Other parties may develop and obtain patent protection for more effective technologies, designs or methods for oxygen therapy or non-invasive ventilation therapy. If these developments were to occur, it would likely have an adverse effect on our sales. Our ability to develop additional patentable technology is also uncertain.

Non-payment or delay in payment of patent fees or annuities, whether intentional or unintentional, may also result in the loss of patents or patent rights important to our business. Many countries, including certain countries in Europe, have compulsory licensing laws under which a patent owner may be compelled to grant licenses to other parties. In addition, many countries limit the enforceability of patents against other parties, including government agencies or government contractors. In these countries, the patent owner may have limited remedies, which could materially diminish the value of the patent. In addition, the laws of some foreign countries do not protect intellectual property rights to the same extent as do the laws of the United States, particularly in the field of medical products and procedures.

Our products could infringe or appear to infringe the intellectual property rights of others, which may lead to patent and other intellectual property litigation that could itself be costly, could result in the payment of substantial damages or royalties, prevent us from using technology that is essential to our products, and/or force us to discontinue selling our products.

The medical device industry in general has been characterized by extensive litigation and administrative proceedings regarding patents and other intellectual property rights. Our competitors hold a significant number of patents relating to respiratory therapy

devices and products. Third parties have in the past asserted and may in the future assert that we are employing their proprietary technology without authorization. For example, Breathe Technologies, Inc. (Breathe), a subsidiary of Hill-Rom Holdings, filed a lawsuit against us, New Aera, Inc., Silverbow Development LLC, and one of our employees on November 21, 2019 in the United States District Court for the Northern District of California. The lawsuit alleged, among other things, willful infringement on certain patents, declared that inventorship was incorrectly assigned and their rights to certain patents filed by New Aera, Inc. and Silverbow Development LLC, breach of contract, inducing breach of contract, interference with contract, and violation of California business and professional code section 17200. If we fail in defending against lawsuits or claims brought against us in the future, we could be subject to substantial monetary damages, injunctive relief, and loss of valuable intellectual property rights, and we cannot predict the outcome of any lawsuit. An adverse determination or protracted defense costs of such lawsuits could have a material effect on our business and operating results.

From time to time, we have also commenced litigation to enforce our intellectual property rights. For example, we previously pursued litigation against Inova Labs, Inc. (a subsidiary of ResMed Corp.) for infringement of two of our patents seeking damages, injunctive relief, costs, and attorneys' fees. While we settled our lawsuit with Inova Labs in June 2016, an adverse decision in any other legal action could limit our ability to assert our intellectual property rights, limit the value of our technology or otherwise negatively affect our business, financial condition and results of operations.

Monitoring unauthorized use of our intellectual property is difficult and costly. Unauthorized use of our intellectual property may have occurred or may occur in the future. Although we have taken steps to minimize the risk of this occurring, any such failure to identify unauthorized use and otherwise adequately protect our intellectual property would adversely affect our business. Moreover, if we are required to commence litigation, whether as a plaintiff or defendant, not only will this be time-consuming, but we will also be forced to incur significant costs and divert our attention and efforts of our employees, which could, in turn, result in lower revenue and higher expenses.

We cannot provide assurance that our products or methods do not infringe or appear to not infringe the patents or other intellectual property rights of third parties and if our business is successful, the possibility may increase that others will assert infringement claims against us whether valid or frivolous.

Determining whether a product infringes a patent involves complex legal and factual issues, defense costs and the outcome of a patent litigation action are often uncertain. We have not conducted an extensive search of patents issued or assigned to other parties, including our competitors, and no assurance can be given that patents containing claims covering or appearing to cover our products, parts of our products, technology or methods do not exist, have not been filed or could not be filed or issued. Because of the number of patents issued and patent applications filed in our technical areas, our competitors or other parties may assert that our products and the methods we employ in the use of our products are covered by U.S. or foreign patents held by them. In addition, because patent applications can take many years to issue and because publication schedules for pending applications may vary by jurisdiction and some patent applications may not be published in the U.S., there may be applications now pending of which we are unaware and which may result in issued patents that our current or future products infringe or appear to infringe. Also, because the claims of published patent applications can change between publication and patent grant, there may be published patent applications that may ultimately issue with claims that we infringe. There could also be existing patents that one or more of our products or parts may infringe and of which we are unaware. As the number of competitors in the market for respiratory products and the number of patents issued in this area grows, the possibility of patent infringement claims against us increases. In certain situations, we may determine that it is in our best interests to voluntarily challenge a party's patents in litigation or other proceedings, including declaratory judgment actions, patent reexaminations, or *inter partes* reviews. As a result, we may become involved in unwanted protracted litigation that could be costly, result in diversion of management's attention, require us to pay damages and/or licensing royalties and force us to discontinue selling our products.

Infringement and other intellectual property claims and proceedings brought against us, whether successful or not, could result in substantial costs and harm to our reputation. Such claims and proceedings can also distract and divert management and key personnel from other tasks important to the success of the business. We cannot be certain that we will successfully defend against allegations of infringement of patents or other intellectual property rights. In the event that we become subject to a patent infringement or other intellectual property related lawsuit and if the asserted patents or other intellectual property were upheld as valid and enforceable and we were found to infringe the asserted patents or other intellectual property, or violate the terms of a license to which we are a party, we could be required to do one or more of the following:

- cease selling or using any of our products that incorporate the asserted intellectual property, which would adversely affect our revenue;
- pay damages for past use of the asserted intellectual property, which may be substantial;

- obtain a license from the holder of the asserted intellectual property, which license may not be available on reasonable royalty terms, if at all, and which could reduce profitability; and
- redesign or rename, in the case of trademark claims, our products to avoid infringing the intellectual property rights of third parties, which may not be possible and could be costly and time-consuming if it is possible to do so.

If we are unable to prevent unauthorized use or disclosure of trade secrets, unpatented know-how and other proprietary information, our ability to compete will be harmed.

We rely on a combination of trade secrets, copyrights, trademarks, confidentiality agreements and other contractual provisions and technical security measures to protect certain aspects of our technology, especially where we do not believe that patent protection is appropriate or obtainable. We require our employees and consultants to execute confidentiality agreements in connection with their employment or consulting relationships with us. We also require our employees and consultants to disclose and assign to us all inventions conceived during the term of their employment or engagement while using our property or that relate to our business. We also require our corporate partners, outside scientific collaborators and sponsored researchers, advisors and others with access to our confidential information to sign confidentiality agreements. We also have taken precautions to initiate reasonable safeguards to protect our information technology systems. However, these measures may not be adequate to safeguard our proprietary intellectual property and conflicts may, nonetheless, arise regarding ownership of inventions. Such conflicts may lead to the loss or impairment of our intellectual property or to expensive litigation to defend our rights against competitors who may be better funded and have superior resources. Our employees, consultants, contractors, outside clinical collaborators and other advisors may unintentionally or willfully disclose our confidential information to competitors. In addition, confidentiality agreements may be unenforceable or may not provide an adequate remedy in the event of unauthorized disclosure. Enforcing a claim that a third-party illegally obtained and is using our trade secrets is expensive and time-consuming, and the outcome is unpredictable. Moreover, our competitors may independently develop equivalent knowledge, methods and know-how. Unauthorized parties may also attempt to copy or reverse engineer certain aspects of our products that we consider proprietary, and in such cases we could not assert any trade secret rights against such party. As a result, other parties may be able to use our proprietary technology or information, and our ability to compete in the market would be harmed.

“Inogen,” “Inogen One,” “Inogen One G2,” “Inogen One G3,” “G4,” “G5,” “Oxygenation,” “Live Life in Moments, not Minutes,” “Never Run Out of Oxygen,” “Oxygen Therapy on Your Terms,” “Oxygen.Anytime.Anywhere,” “Reclaim Your Independence,” “Intelligent Delivery Technology,” “Inogen At Home,” the Inogen design, “TIDAL ASSIST,” “TAV,” and “SIDEKICK” are registered trademarks with the United States Patent and Trademark Office of Inogen, Inc. We own pending applications for “Inogen,” “MOMENTUM TRANSFER” and “SONIC BLADE” with the United States Patent and Trademark Office. We own trademark registrations for the mark “Inogen” in Australia, Canada, South Korea, Mexico, Europe (European Union registration), Iceland, India, Israel, Japan, New Zealand, Norway, Peru, Turkey, and Singapore, and Switzerland. We own pending applications for the mark “Inogen” in Argentina, Brazil, Chile, China, Colombia, Ecuador, Kuwait, Malaysia, Paraguay, South Africa, and Uruguay. We own a trademark registration for the mark “イノジェン” in Japan. We own trademark applications for the marks “印诺真” and “艾诺根” in China. We own trademark registrations for the mark “Inogen One” in Australia, Canada, China, South Korea, Mexico, and Europe (European Union registration). We own a trademark registration for the mark “Satellite Conserver” in Canada. We own a trademark registration for the mark “Inogen At Home” in Europe (European Union Registration). We own trademark registrations for the mark “G4” in Europe (European Union registration) and the United Kingdom. We own trademark registrations for the mark “G5” in Europe (European Union Registration) and the United Kingdom. We own trademark applications for the Inogen design in Bolivia and China. Other service marks, trademarks, and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

We may be subject to damages resulting from claims that our employees, agents or we have wrongfully used or disclosed alleged trade secrets of other companies.

Some of our employees and consultants, including employees who joined us following our acquisition of New Aera, were previously employed by or contracted with other medical device companies focused on the development of oxygen therapy and non-invasive ventilation products, including our competitors. We may be subject to claims that these employees or agents have inadvertently or otherwise used or disclosed trade secrets or other proprietary information of their former employers. Litigation may be necessary to defend against these claims. For example, Breathe Technologies, Inc. (Breathe), a subsidiary of Hill-Rom Holdings, filed a lawsuit against us, New Aera, Inc., Silverbow Development, LLC, and one of our employees on November 21, 2019 in the United States District Court for the Northern District of California. The lawsuit alleged, among other things, willful infringement on certain patents, declared that inventorship was incorrectly assigned and their rights to certain patents filed by New Aera, Inc. and Silverbow Development, LLC, breach of contract, inducing breach of contract, interference with contract, and violation of California business and professional code section 17200. If we fail in defending against such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights and may be enjoined from using valuable technology in our products. Even if we are successful in defending against these claims, litigation could result in substantial costs, damage to our reputation and be a distraction to management.

Risks related to being a public company

We will incur increased costs as a result of operating as a public company and our management will be required to devote substantial time to compliance initiatives and corporate governance practices.

As a public company, especially now that we are no longer an “emerging growth company,” we will continue to incur significant legal, accounting and other expenses that we did not incur as a private company. In addition, the Sarbanes-Oxley Act of 2002 and rules enforced by the Public Companies Oversight Board (PCAOB) subsequently implemented by the SEC and the NASDAQ Global Select Market impose numerous requirements on public companies, including establishment and maintenance of effective disclosure and financial controls and corporate governance practices. Also, the Securities Exchange Act of 1934, as amended, or the Exchange Act, requires, among other things, that we file annual, quarterly and current reports with respect to our business and operating results. Our management and other personnel will need to devote a substantial amount of time to compliance with these laws and regulations. These requirements have increased and will continue to increase our legal, accounting, external audit and financial compliance costs and have made and will continue to make some activities more time consuming and costly. For example, we expect these rules and regulations to make it more difficult and more expensive for us to obtain director and officer liability insurance, and we may be required to incur substantial costs to maintain the same or similar coverage. These rules and regulations could also make it more difficult for us to attract and retain qualified persons to serve on our board of directors or our board committees or as executive officers.

Overall, we estimate that our incremental costs resulting from operating as a public company, including compliance with these rules and regulations, may be between \$1.5 million and \$3.0 million per year. However, these rules and regulations are often subject to varying interpretations, in many cases due to their lack of specificity, and, as a result, their application in practice may evolve over time as new guidance is provided by regulatory and governing bodies and public accounting firms are subject to PCAOB compliance audits. This could result in continuing uncertainty regarding compliance matters and higher costs necessitated by ongoing revisions to disclosure and governance practices.

The Sarbanes-Oxley Act requires, among other things, that we assess and document the effectiveness of our internal control over financial reporting annually and the effectiveness of our disclosure controls and procedures quarterly. In particular, Section 404(a) of the Sarbanes-Oxley Act, or Section 404(a), requires us to perform system and process evaluation and testing of our internal control over financial reporting to allow management to report on the effectiveness of our internal control over financial reporting. Section 404(b) of Sarbanes-Oxley Act, or Section 404(b), also requires our independent registered public accounting firm to attest to the effectiveness of our internal control over financial reporting. Now that we are no longer an “emerging growth company,” our independent registered public accounting firm is required to undertake an assessment of our internal control over financial reporting, and the cost of our compliance with Section 404(b) is higher. Our compliance with applicable provisions of Section 404 will require that we incur substantial accounting expense and expend significant management time on compliance-related issues as we implement additional corporate governance practices and comply with reporting requirements.

Furthermore, investor perceptions of our company may suffer if deficiencies are found, and this could cause a decline in the market price of our stock. Irrespective of compliance with Section 404, any failure of our internal control over financial reporting could have a material adverse effect on our stated operating results and harm our reputation. If we are unable to implement these requirements effectively or efficiently, it could harm our operations, financial reporting, or financial results and could result in an adverse opinion on our internal controls from our independent registered public accounting firm.

Failure to maintain effective internal controls could cause our investors to lose confidence in us and adversely affect the market price of our common stock. If our internal controls are not effective, we may not be able to accurately report our financial results or prevent fraud.

Section 404 of the Sarbanes-Oxley Act, or Section 404, requires that we maintain internal control over financial reporting that meets applicable standards. We may err in the design, operation or documentation of our controls, and all internal control systems, no matter how well designed and operated, can provide only reasonable assurance that the objectives of the control system are met. Because there are inherent limitations in all control systems, there can be no absolute assurance that all control issues have been or will be detected. If we are unable, or are perceived as unable, to produce reliable financial reports due to internal control deficiencies, investors could lose confidence in our reported financial information and operating results, which could result in a negative market reaction.

We are required to disclose significant changes made in our internal controls and procedures on a quarterly basis. Now that we are no longer an “emerging growth company,” our independent registered public accounting firm is also required to attest to the effectiveness of our internal control over financial reporting pursuant to Section 404. Our independent registered public accounting firm may issue a report that is adverse in the event it is not satisfied with the level at which our controls are documented, designed or operating. Our remediation efforts may not enable us to avoid a material weakness in the future. Additionally, to comply with the requirements of being a public company, we may need to undertake various actions, such as implementing new internal controls and procedures and hiring accounting or internal audit staff or consultants, which may adversely affect our results of operations and financial condition.

Although prior material weaknesses have been remediated, we cannot assure you that our internal controls will continue to operate properly or that our financial statements will be free from error. There may be undetected material weaknesses in our internal control over financial reporting, as a result of which we may not detect financial statement errors on a timely basis. Moreover, in the future we may implement new offerings and engage in business transactions, such as acquisitions, reorganizations or implementation of new information systems that could require us to develop and implement new controls and could negatively affect our internal control over financial reporting and result in material weaknesses.

If we identify new material weaknesses in our internal control over financial reporting, if we are unable to comply with the requirements of Section 404 in a timely manner, if we are unable to assert that our internal controls over financial reporting are effective, or if our independent registered public accounting firm is unable to express an opinion as to the effectiveness of our internal control over financial reporting, we may be late with the filing of our periodic reports, investors may lose confidence in the accuracy and completeness of our financial reports and the market price of our common stock could be negatively affected. As a result of such failures, we could also become subject to investigations by the stock exchange on which our securities are listed, the SEC, or other regulatory authorities, and become subject to litigation from investors and stockholders, which could harm our reputation, financial condition or divert financial and management resources from our core business.

Risks related to our common stock

We expect that our stock price will fluctuate significantly, you may have difficulty selling your shares, and you could lose all or part of your investment.

Our stock is currently traded on NASDAQ, but we can provide no assurance that we will be able to maintain an active trading market on NASDAQ or any other exchange in the future. If an active trading market does not develop, you may have difficulty selling any of our shares of common stock that you buy. In addition, the trading price of our common stock may be highly volatile and could be subject to wide fluctuations in response to various factors, some of which are beyond our control. These factors include:

- actual or anticipated quarterly variation in our results of operations or the results of our competitors;
- announcements of secondary offerings;
- announcements by us or our competitors of new commercial products, significant contracts, commercial relationships or capital commitments;
- issuance of new or changed securities analysts’ reports or recommendations for our stock;
- developments or disputes concerning our intellectual property or other proprietary rights;
- commencement of, or our involvement in, litigation;
- market conditions in the oxygen therapy or NIV markets;
- reimbursement or legislative changes in the oxygen therapy or NIV markets;

- failure to complete significant sales;
- manufacturing disruptions that could occur if we were unable to successfully expand our production in our current or an alternative facility;
- any future sales of our common stock or other securities;
- any major change to the composition of our board of directors or management;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- the other factors described in this “Risk Factors” section; and
- general economic conditions and slow or negative growth of our markets.

The stock market in general and market prices for the securities of technology-based companies like ours in particular, have from time to time experienced volatility that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance. In several recent situations where the market price of a stock has been volatile, holders of that stock have instituted securities class action litigation against the company that issued the stock.

Stockholder litigation has been filed against us in the past, and a class action securities lawsuit and related derivatives complaints against us are currently pending, as discussed in the “Legal Proceedings” section of this Annual Report on Form 10-K. While we are continuing to defend such actions vigorously, the defense of such actions can be costly, divert the time and attention of our management and harm our operating results, and any judgment against us or any future stockholder litigation could result in substantial costs.

If securities or industry analysts do not publish research or publish unfavorable research about our business, our stock price and trading volume could decline.

The trading market for our common stock will rely in part on the research and reports that equity research analysts publish about us and our business. We will not have any control of the analysts or the content and opinions included in their reports. The price of our stock could decline if one or more equity research analysts downgrade our stock or issue other unfavorable commentary or research. If one or more equity research analysts ceases coverage of our company or fails to publish reports on us regularly, demand for our stock could decrease, which in turn could cause our stock price or trading volume to decline.

Future sales of shares could cause our stock price to decline.

Our stock price could decline as a result of sales of a large number of shares of our common stock or the perception that these sales could occur. These sales, or the possibility that these sales may occur, also might make it more difficult for us to sell equity securities in the future at a time and at a price that we deem appropriate.

As of December 31, 2019, one holder of approximately 3.5 million shares, or approximately 16.1%, of our outstanding shares, has rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. We have also registered the offer and sale of all shares of common stock that we may issue under our equity compensation plans.

In addition, in the future, we may issue additional shares of common stock or other equity or debt securities convertible into common stock in connection with a financing, acquisition, litigation settlement, and employee arrangements or otherwise. Any such issuance could result in substantial dilution to our existing stockholders and could cause our stock price to decline.

Our directors, executive officers and principal stockholders will continue to have substantial control over us and could limit your ability to influence the outcome of key transactions, including changes of control.

As of December 31, 2019, our executive officers, directors and stockholders who owned more than 5% of our outstanding common stock and their respective affiliates beneficially owned or controlled approximately 67.4% of the outstanding shares of our common stock. Accordingly, these executive officers, directors and stockholders who owned more than 5% of our outstanding common stock and their respective affiliates, acting as a group, have substantial influence over the outcome of corporate actions requiring stockholder approval, including the election of directors, any merger, consolidation or sale of all or substantially all of our assets or any other significant corporate transactions. These stockholders may also delay or prevent a change of control of us, even if

such a change of control would benefit our other stockholders. The significant concentration of stock ownership may adversely affect the trading price of our common stock due to investors' perception that conflicts of interest may exist or arise.

Anti-takeover provisions in our charter documents and under Delaware law could make an acquisition of us, which may be beneficial to our stockholders, more difficult and may prevent attempts by our stockholders to replace or remove our current management and limit the market price of our common stock.

Provisions in our certificate of incorporation and bylaws may have the effect of delaying or preventing a change of control or changes in our management. Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- authorize our board of directors to issue, without further action by the stockholders, up to 10,000,000 shares of undesignated preferred stock;
- require that any action to be taken by our stockholders be affected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman of the board of directors, or the Chief Executive Officer;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered three-year terms;
- provide that our directors may be removed only for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- specify that no stockholder is permitted to cumulate votes at any election of directors; and
- require a super-majority of votes to amend certain of the above-mentioned provisions.

These provisions may frustrate or prevent any attempts by our stockholders to replace or remove our current management by making it more difficult for stockholders to replace members of our board of directors, which is responsible for appointing the members of our management. In addition, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law, which limits the ability of stockholders owning in excess of 15% of our outstanding voting stock to merge or combine with us.

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

We have paid no cash dividends on any of our classes of capital stock to date and currently intend to retain our future earnings to fund the development and growth of our business. In addition, we may become subject to covenants under future debt arrangements that place restrictions on our ability to pay dividends. As a result, capital appreciation, if any, of our common stock is expected to be your sole source of gain for the foreseeable future.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2019, we lease approximately 46,000 square feet of manufacturing and office space at our corporate headquarters in Goleta, California under leases that expire in October 2020; approximately 31,000 square feet of office space in Richardson, Texas under a lease that expired in December 2019 and will be considered month-to-month subsequent to expiration; approximately 60,000 square feet of manufacturing and repair space in Richardson, Texas under leases that expire in January 2022 and March 2022; and approximately 94,000 square feet of office space in Cleveland, Ohio under a lease that expires in September 2024. In addition, we lease approximately 4,000 square feet of office space in Smyrna, Tennessee; Huntsville, Alabama; Aurora, Colorado; and Breukelen in the Netherlands with lease terms of 3 years. We also own land and office space in Manitowoc, Wisconsin. As of December 31, 2019, we also had additional operating leases for our corporate headquarters in Goleta, California and commercial and industrial space in Plano, Texas that have not yet commenced with approximately 50,000 square feet and 54,000 square feet,

respectively, of manufacturing and office space. We believe that our existing facilities and the facilities under the recent leases we have entered into to be commenced in 2020 and 2021 are adequate to meet our current business requirements and that if additional space is required, it will be available on commercially reasonable terms. In addition, we believe that our properties are in good condition and are adequate and suitable for their intended purposes.

ITEM 3. LEGAL PROCEEDINGS

Intellectual property lawsuit

On November 21, 2019, Breathe Technologies, Inc. (Breathe), a subsidiary of Hill-Rom Holdings, filed a lawsuit against Inogen, Inc., New Aera, Inc., Silverbow Development, LLC, and Todd W. Allum in the United States District Court for the Northern District of California. Breathe alleged willful infringement on certain patents, declared that inventorship was incorrectly assigned and their rights to certain patents filed by New Aera, Inc. and Silverbow Development LLC, breach of contract, inducing breach of contract, interference with contract, and violation of California business and professional code section 17200. The complaint seeks inventorship of patents to be corrected, injunctive relief, compensatory and punitive damages in an unspecified amount including trebling of all damages awarded with respect to infringement of the '250 patent, costs and expenses, including attorneys' fees and expert fees, prejudgment and post-judgment interest and such other relief as the court deems proper. The Company intends to vigorously defend itself against these allegations.

Securities class action and derivative lawsuits

On March 6, 2019, plaintiff William Fabbri filed a lawsuit against Inogen, Scott Wilkinson, and Alison Bauerlein, in the United States District Court for the Central District of California on behalf of a purported class of purchasers of the Company's securities. On March 21, 2019, plaintiff Steven Friedland filed a substantially similar lawsuit against the same defendants in the same court. On May 20, 2019, the court issued an order consolidating the two lawsuits under the name *In re Inogen, Inc. Sec. Litig.*, No. 2:19-cv-01643-FMO-AGR, appointing Dr. John Vasil and Paragon Fund Management as lead plaintiffs, and appointing Robbins Geller Rudman & Dowd LLP and Glancy Prongay & Murray LLP as lead plaintiffs' counsel. On July 10, 2019, the lead plaintiffs filed a consolidated amended complaint on behalf of a purported class of purchasers of the Company's common stock between November 8, 2017 and May 7, 2019. The complaint generally alleges that the defendants failed to disclose that: (i) Inogen had overstated the true size of the total addressable market for its portable oxygen concentrators and had misstated the basis for its calculation of the total addressable market; (ii) Inogen had falsely attributed its sales growth to the strong sales acumen of its salesforce, rather than to deceptive sales practices; (iii) the growth in Inogen's domestic business-to-business sales to home medical equipment providers was inflated, unsustainable and was eroding direct-to-consumer sales; and (iv) Inogen's decision to focus on sales over rentals of portable oxygen concentrators harmed its ability to serve the Medicare market, in violation of sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended. The complaint seeks compensatory damages in an unspecified amount, costs and expenses, including attorneys' fees and expert fees, prejudgment and post-judgment interest and such other relief as the court deems proper. On January 2, 2020, the court dismissed the consolidated amended complaint with leave to amend. On January 9, 2020, the plaintiffs filed a second amended complaint generally alleging substantially similar claims as those in the previous complaint. On January 23, 2020, the defendants filed a motion to dismiss the second amended complaint. The Company intends to vigorously defend itself against these allegations.

On June 26, 2019, plaintiff Twana Brown filed a shareholder derivative lawsuit against Inogen, Scott Wilkinson, Alison Bauerlein, Benjamin Anderson-Ray, Scott Beardsley, R. Scott Greer, Raymond Huggenberger, Heath Lukatch, Loren McFarland, and Heather Rider in the United States District Court for the Central District of California. The complaint purports to bring claims on behalf of Inogen against the individual defendants for breaches of their fiduciary duties as directors and/or officers of Inogen, unjust enrichment, waste of corporate assets and violations of section 14(a) of the Securities Exchange Act of 1934, as amended. The complaint generally alleges similar claims to the securities class action. The complaint seeks compensatory damages and restitution in an unspecified amount, changes to the Company's corporate governance and internal procedures, costs and expenses, including attorneys' fees and expert fees, and such other relief as the court deems proper. On August 5, 2019, the court issued an order staying the derivative action pending the resolution of the motion to dismiss stage in *In re Inogen, Inc. Sec. Litig.* Between October 7, 2019 and October 31, 2019, three additional shareholder derivative complaints were filed in the United States District Court for the Central District of California based on similar factual allegations. These lawsuits purport to bring claims on behalf of Inogen for breach of fiduciary duty, unjust enrichment, waste of corporate assets, insider trading and misappropriation of information, and violations of section 14(a) of the Securities Exchange Act of 1934, as amended. On January 13, 2020, the court consolidated the four derivative lawsuits before it under the name *In re Inogen, Inc. S'holder Deriv. Litig.*, Lead Case No. 2:19-cv-5568-FMO-AGR and ordered that the consolidated action be stayed pending the resolution of the motion to dismiss stage in *In re Inogen, Inc., Sec. Litig.*

On September 13, 2019, plaintiff Dustin Weller filed a shareholder derivative lawsuit against Inogen, Scott Wilkinson, Alison Bauerlein, Benjamin Anderson-Ray, Scott Beardsley, R. Scott Greer, Raymond Huggenberger, Heath Lukatch, Loren McFarland, and Heather Rider in the United States District Court for the District of Delaware captioned *Weller v. Wilkinson, et al.*, No. 1:19-cv-01723-MN. On October 17, 2019, plaintiff Sharokh Soltanipour filed a shareholder derivative lawsuit against the same defendants in the same court, captioned *Soltanipour v. Wilkinson, et al.*, No. 1:19-cv-1968-MN. The complaints generally allege similar claims to those in *In re Inogen, Inc., S'holder Deriv. Litig.* The complaints purport to bring claims on behalf of Inogen for breach of fiduciary duty, unjust enrichment, waste of corporate assets, abuse of control, gross mismanagement, insider selling and misappropriation of information, violations of section 14(a) of the Securities Exchange Act of 1934, as amended, and for contribution from certain of the individual defendants. The complaints seek compensatory damages in unspecified amounts, changes to the Company's corporate governance and internal procedures, return of compensation, disgorgement of profits from sale of stock, costs and expenses, including attorneys' fees and expert fees, and such other relief as the court deems proper. On December 23, 2019 and January 6, 2020, plaintiffs filed cross-motions to consolidate the two cases and to appoint lead counsel.

Other litigation

In the normal course of business, we are from time to time involved in various legal proceedings or potential legal proceedings, including matters involving employment, product liability and intellectual property. We carry insurance, subject to specified deductibles under our policies, to protect against losses from certain liabilities and costs. At this time, we do not anticipate that any of these proceedings arising in the normal course of business will have a material adverse effect on our business. Regardless of the outcome, litigation can have an adverse impact on us because of defense and settlement costs, diversion of management resources, and other factors.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

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

Market information and holders

Our common stock has been publicly traded on the NASDAQ Global Select Market under the symbol "INGN" since February 14, 2014. Prior to that time, there was no public market for our common stock.

On February 21, 2020, the closing price for our common stock as reported on the NASDAQ Global Select Market was \$44.13 per share.

Stock performance graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of ours under the Securities Act of 1933, as amended, except as shall be expressly set forth by specific reference in such filing.

The following graph compares the performance of our common stock for the periods indicated with the performance of the S & P Healthcare and Supplies Index, the Russell 2000 Index, and the NASDAQ Composite Index from December 31, 2014 to December 31, 2019. This graph assumes an investment of \$100 on December 31, 2014 in each of our common stock, the NASDAQ Composite Index, the S & P Healthcare Equipment and Supplies Index, the Russell 2000 Index and assumes reinvestment of dividends, if any. The stock price performance shown on the graph below is not necessarily indicative of future stock price performance.

STOCKHOLDER RETURN PERFORMANCE GRAPH
COMPARISON OF THE 5 YEAR CUMULATIVE TOTAL RETURN

Among Inogen, Inc., the S & P Healthcare Equipment and Supplies Index, the Russell 2000 Index and the NASDAQ Composite Index



	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18	12/31/19
Inogen, Inc.	\$ 100.00	\$ 127.80	\$ 214.12	\$ 386.74	\$ 395.82	\$ 216.29
S & P Healthcare Equipment & Supplies^(1)	100.00	109.99	122.73	158.93	172.93	210.37
Russell 2000^(2)	100.00	94.29	112.65	127.46	111.94	138.14
NASDAQ Composite^(3)	100.00	105.73	113.66	145.76	140.10	188.89

(1) The S&P Healthcare Equipment and Supplies Index is a capitalization weighted-average index compiled of healthcare companies in the S&P 500 Index.

(2) The Russell 2000 Index is a small-cap stock market index of the bottom 2,000 stocks in the Russell 3000 Index.

(3) The NASDAQ Composite is a market-value weighted index of all common stocks listed on the NASDAQ.

Stockholders

As of February 21, 2020, there were 27 registered stockholders of record for our common stock. The actual number of stockholders is greater than this number of record holders and includes stockholders who are beneficial owners but whose shares are held in street name by brokers and other nominees. This number of holders of record also does not include stockholders whose shares may be held in trust by other entities.

Dividend policy

We have never declared or paid any cash dividends on our common stock or any other securities. We anticipate that we will retain all available funds and any future earnings, if any, for use in the operation of our business and do not anticipate paying cash dividends in the foreseeable future. In addition, future debt instruments we issue may materially restrict our ability to pay dividends on our common stock. Payment of future cash dividends, if any, will be at the discretion of our board of directors after taking into

account various factors, including our financial condition, operating results, current and anticipated cash needs, the requirements of then-existing debt instruments and other factors our board of directors deems relevant.

Securities authorized for issuance under equity compensation plans

The information required by this Item regarding equity compensation plans is incorporated by reference to the information set forth in PART III Item 12 of this Annual Report on Form 10-K.

Unregistered sales of equity securities

None.

Issuer purchases of equity securities

None.

ITEM 6. SELECTED FINANCIAL DATA

The following selected financial data is derived from our audited consolidated financial statements and should be read in conjunction with, and is qualified in its entirety by, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” and Item 8, “Financial Statements and Supplementary Data,” contained elsewhere in this Annual Report on Form 10-K. The selected Condensed Consolidated Statements of Comprehensive Income data for the years ended December 31, 2019, 2018 and 2017 and Condensed Consolidated Balance Sheet Data as of December 31, 2019 and 2018 have been derived from our audited consolidated financial statements appearing elsewhere in this Annual Report on Form 10-K. The selected Condensed Consolidated Statements of Comprehensive Income data for the years ended December 31, 2016 and 2015 and Condensed Consolidated Balance Sheet data as of December 31, 2017, 2016 and 2015 have been derived from our audited consolidated financial statements that are not included in this Annual Report on Form 10-K. Our historical results are not necessarily indicative of the results that may be expected in the future.

(amounts in thousands)

Condensed consolidated statements of comprehensive income	Years ended December 31,				
	2019	2018	2017	2016	2015
Revenue					
Sales revenue	\$ 340,546	\$ 336,015	\$ 225,492	\$ 168,170	\$ 113,625
Rental revenue	21,397	22,096	23,946	34,659	45,380
Total revenue	361,943	358,111	249,438	202,829	159,005
Cost of revenue					
Cost of sales revenue	175,974	163,989	110,163	85,154	61,553
Cost of rental revenue	14,108	15,542	18,038	20,365	21,194
Total cost of revenue	190,082	179,531	128,201	105,519	82,747
Gross profit	171,861	178,580	121,237	97,310	76,258
Operating expenses					
Research and development	9,401	7,029	5,313	5,113	4,180
Sales and marketing	105,550	95,641	50,758	37,540	31,369
General and administrative	37,121	38,018	37,576	31,793	25,658
Total operating expenses	152,072	140,688	93,647	74,446	61,207
Income from operations	19,789	37,892	27,590	22,864	15,051
Other income (expense), net	4,483	2,563	2,066	(139)	(324)
Income before provision (benefit) for income taxes	24,272	40,455	29,656	22,725	14,727
Provision (benefit) for income taxes	3,322	(11,390)	8,654	2,206	3,142
Net income	\$ 20,950	\$ 51,845	\$ 21,002	\$ 20,519	\$ 11,585

(amounts in thousands, except share and per share amounts) (1)	Years ended December 31,				
	2019	2018	2017	2016	2015
Numerator—basic and diluted:					
Net income	\$ 20,950	\$ 51,845	\$ 21,002	\$ 20,519	\$ 11,585
Denominator:					
Weighted-average common shares - basic common stock	21,821,104	21,266,696	20,683,807	20,067,152	19,398,991
Weighted-average common shares - diluted common stock	22,241,064	22,514,513	21,897,988	21,095,867	20,708,170
Net income per share - basic common stock	\$ 0.96	\$ 2.44	\$ 1.02	\$ 1.02	\$ 0.60
Net income per share - diluted common stock	\$ 0.94	\$ 2.30	\$ 0.96	\$ 0.97	\$ 0.56
Shares excluded from diluted weighted-average common shares - diluted common stock:					
Stock options and other dilutive awards	223,193	39,330	63,313	841,760	744,301
Shares excluded from diluted weighted-average common shares - diluted common stock	223,193	39,330	63,313	841,760	744,301

(1) See Note 2 to each of our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K for an explanation of the calculations of our basic and diluted net income per share attributable to common stockholders.

(amounts in thousands)	As of December 31,				
	2019(1)	2018	2017	2016	2015
Condensed consolidated balance sheet data					
Cash and cash equivalents	\$ 198,037	\$ 196,634	\$ 142,953	\$ 92,851	\$ 66,106
Working capital	242,038	267,998	194,602	138,700	92,831
Total assets	447,339	375,898	275,072	214,049	161,314
Total indebtedness	—	—	—	—	315
Deferred revenue	19,019	16,295	12,935	9,281	6,522
Total liabilities	102,718	65,474	48,031	31,961	27,296
Total stockholders' equity	\$ 344,621	\$ 310,424	\$ 227,041	\$ 182,088	\$ 134,018

(1) Includes the following: 1) adoption of Accounting Standards Update No. 2016-02, *Leases (Topic 842)* that was adopted on January 1, 2019, and prior period amounts have not been adjusted under the modified retrospective method; and 2) total assets and liabilities of New Aera from the date of its acquisition on August 9, 2019, which included \$92.9 million in total assets and \$26.6 million in total liabilities as of December 31, 2019 from New Aera.

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

The following discussion and analysis of the financial condition and results of our operations should be read in conjunction with the consolidated financial statements and related notes included elsewhere in this Annual Report on Form 10-K. This discussion contains forward-looking statements that involve risks and uncertainties. Our actual results could differ materially from those discussed below. Factors that could cause or contribute to such differences include, but are not limited to, those identified below, and those discussed in the section titled "Risk Factors" included elsewhere in this Annual Report on Form 10-K.

Overview

We are a medical technology company that primarily develops, manufactures and markets innovative portable oxygen concentrators used to deliver supplemental long-term oxygen therapy to patients suffering from chronic respiratory conditions. Long-term oxygen therapy is defined as the provision of oxygen therapy for use at home in patients who have chronic low blood oxygen levels (hypoxemia). Traditionally, these patients have relied on stationary oxygen concentrator systems for use in the home and oxygen tanks or cylinders for mobile use, which we call the delivery model. The tanks and cylinders must be delivered regularly and have a finite amount of oxygen, which requires patients to plan activities outside of their homes around delivery schedules and a finite oxygen supply. Additionally, patients must attach long, cumbersome tubing to their stationary concentrators simply to enable mobility within their homes. Our proprietary Inogen One® systems concentrate the air around the patient to offer a single source of supplemental oxygen anytime, anywhere with a portable device weighing as little as approximately 2.8 pounds with a single battery. We believe our Inogen One systems reduce the patient's reliance on stationary concentrators and scheduled deliveries of tanks with a finite supply of oxygen, thereby improving patient quality of life and fostering mobility.

We believe that we were the first oxygen therapy manufacturer to employ a direct-to-consumer marketing strategy, meaning we advertise directly to patients, process their physician paperwork, and provide clinical support as needed, which we believe has contributed to our market leadership position in the portable oxygen concentrator market. While other manufacturers have also begun direct-to-consumer marketing campaigns to drive patient sales, we believe we are the only portable oxygen concentrator manufacturer that employs a direct-to-consumer rental strategy in the United States, meaning we bill Medicare or insurance on the consumer's behalf.

We derive the majority of our revenue from the sale and rental of our Inogen One systems and related accessories to patients, insurance carriers, home healthcare providers, resellers, and distributors, including our private label partner. We sell multiple configurations of our Inogen One and Inogen At Home systems with various batteries, accessories, warranties, power cords and language settings. We also rent our products to Medicare beneficiaries and patients with other insurance coverage to support their long-term oxygen needs as prescribed by a physician as part of a care plan. Our goal is to design, build and market oxygen solutions that redefine how long-term oxygen therapy is delivered.

To accomplish this goal and to grow our revenue, we intend to:

- *Expand our domestic direct-to-consumer sales and physician-based sales teams and increase productivity.* During the year ended December 31, 2019, the number of inside sales representatives decreased to 329 from 446 as of December 31, 2018, however overall sales representative productivity improved during the period. In the second half of 2019, we restarted our sales capacity expansion efforts with a more measured approach, selectively hiring new sales representatives across all three of our facilities. Going forward, we plan to continue to hire at a steady pace to expand sales capacity while focusing on increasing productivity, improved sales personnel and lead distribution systems, improved training, and emphasizing the availability of the Inogen One G5, which has higher patient preference. We also plan to expand our physician referral team in 2020 to drive increased physician referrals for rental patients and direct-to-consumer sales. This specialized sales team consisted of 20 employees as of December 31, 2019.
- *Expand our domestic direct-to-consumer marketing, drive better lead utilization, and optimize pricing.* We expended \$40.3 million in media and advertising costs in 2019 compared to \$30.8 million in 2018, to drive greater patient awareness of our products and increase patient inquiries about their ability to switch from their current oxygen products to our technology. We plan to continue to increase marketing spend to drive consumer and physician awareness of our products in 2020. We also plan to perform a pricing trial in 2020 to optimize pricing in our direct-to-consumer sales channel as well as look for opportunities to improve the close rate of leads through product offerings, pricing, and partnerships with home medical equipment (HME) providers.

- *Expand our domestic home medical equipment provider and reseller sales in the face of reimbursement uncertainty.* We are also focused on building our domestic business-to-business partnerships, including relationships with distributors, key accounts, resellers, our private label partner, and traditional HME providers. We offer patient-preferred, low service cost products and financing programs to help providers convert their businesses to a non-delivery portable oxygen concentrator business model.

While HME providers have been adopting our products, we expect growth could be challenged due to difficulties in their ongoing efforts to restructure from the delivery business model to the non-delivery portable model, lack of access to available credit, provider capital expenditure constraints, and pending competitive bidding Round 2021 and the lack of visibility to who will win contracts and any change in reimbursement rates.

- *Expand our rental revenues through a dedicated rental intake team.* During the year ended December 31, 2019, we added a rental intake team to focus exclusively on new rental additions to drive overall sales productivity and simplify training. We ended 2019 with 25 patient intake representatives and administrative personnel and plan to continue to scale the rental intake team in 2020, which we believe will lead to increased patients on service and modest growth in rental revenue for the year.
- *Increase international business-to-business adoption.* Although our main growth opportunity remains portable oxygen concentrator adoption in the United States given what we still believe is a relatively low penetration rate, we are aware of the large international market opportunity. In order to take advantage of these international opportunities, we have built out an infrastructure over the past few years, which includes sales in 46 international countries and a contract manufacturing partner, Foxconn, located in the Czech Republic to support European sales volumes. Further, we are also in the process of developing regulatory and sales pathways to capture opportunities in new and emerging markets. We expect to begin sales in the Chinese market as early as 2021. Over time, as the U.S. and European markets mature, our growth will depend on our ability to drive portable oxygen concentrator adoption in emerging markets, where limited oxygen therapy treatment exists today. However, growth may also be limited by currency fluctuations, capital expenditure constraints, ongoing restructuring challenges, and tender uncertainty.
- *Invest in our oxygen product offerings to develop innovative products* We expended \$9.4 million, \$7.0 million and \$5.3 million in 2019, 2018 and 2017, respectively, in research and development expenses, and we intend to continue to make such investments in the foreseeable future. We launched our fifth-generation portable oxygen concentrator, the Inogen One G5, in our direct-to-consumer channel during the second quarter of 2019, in our domestic business-to-business channel during the third quarter of 2019, and in certain markets in our international business-to-business channel in the fourth quarter of 2019. Some international markets require additional regulatory or reimbursement clearances to release the product, and we are in the process of obtaining additional clearances to access additional markets. The Inogen One G5 weighs 4.7 pounds and produces 1,260 ml per minute of oxygen output, with very quiet operation at 38 dBA and our longest battery life at 6.5 hours for a single battery and up to 13 hours for a double battery. We estimate that the Inogen One G5 is suitable for over 90% of ambulatory long-term oxygen therapy patients based on our analysis of the patients who have contacted us and their clinical needs. We expect the Inogen One G5 to obsolete the Inogen One G3 over the intermediate term. At volume, we expect the Inogen One G5 to be our lowest cost product to manufacture. The Inogen One G5 represented more than 55% of total domestic units sold in the fourth quarter of 2019, showing the strong demand for this product from both patients and providers.

In the fourth quarter of 2018, we launched Inogen Connect, our new connectivity platform on our Inogen One G4 in our direct-to-consumer channel and in our domestic business-to-business channel in the first quarter of 2019. We also launched Inogen Connect in our Inogen One G5 at the launch of this product in the United States. Inogen Connect is compatible with Apple and Android platforms and includes patient features such as purity status, battery life, product support functions, notification alerts, and remote software updates. We believe home oxygen providers will also find features such as remote troubleshooting, equipment health checks, and location tracking to help drive operational efficiencies when transitioning away from the oxygen tank delivery model.

- *Expand our product offerings.* In August 2019, we acquired New Aera, Inc. (New Aera). New Aera's patented and FDA-cleared Tidal Assist Ventilator (TAV) system is designed to deliver increased air flow and pressure from an approximately 4-ounce pocket-size unit, features a state-of-the-art nasal pillow interface, and is compatible with certain oxygen concentrators, oxygen cylinders, wall gas, and certain medical air sources. TAV therapy with oxygen has been clinically demonstrated during periods of exercise to reduce breathlessness, increase exercise endurance, and improve oxygen saturation for patients suffering from certain chronic lung disease compared to oxygen therapy alone. We began a limited launch of the TAV product in December 2019, and we plan to integrate this product across our domestic direct-to-consumer channel and in our domestic business-to-business channel in 2020, although we expect limited contributions to revenue in 2020. We plan to incorporate the TAV technology directly into our Inogen One portable oxygen concentrators and make the TAV product compatible with our Inogen At Home stationary concentrators to continue to advance patient preference and maintain our technology leadership position in the long-term oxygen therapy market.

In addition, we plan to use this technology as a platform to expand our total addressable market into the high-growth non-invasive ventilation (NIV) market, where we believe there is a significant worldwide untreated market opportunity. We believe this market could undergo disruption similar to oxygen given the pending reimbursement changes due to the inclusion of this category in competitive bidding Round 2021 and the immobile nature of legacy NIV product offerings. The monthly Medicare reimbursement rate is significantly higher for NIV products than oxygen therapy at a minimum of \$934 a month. Also, effective January 1, 2019, a new Medicare Healthcare Common Procedure Coding System (HCPCS) code has been added to allow billing for a multi-function ventilator that includes both ventilation and oxygen. We are targeting to launch a product for this purpose in 2021.

It is uncertain if the TAV product acquired from New Aera will be reimbursable in its current configuration under HCPCS code E0466. We requested confirmation on the assigned HCPCS codes for the TAV system from the Pricing, Data Analysis, and Coding (PDAC) Contractor in August 2019 following the closing of the New Aera transaction. In August 2019, we received positive confirmation that this product was assigned HCPCS code E0466. However, in September 2019, we received a revised communication that the product was assigned HCPCS code E1390 and E1352, which was then revoked at our request in December 2019. In September 2019, we appealed to the Centers for Medicare and Medicaid Services, and in January 2020 our appeal was denied. We are currently pursuing additional appeal opportunities. If we do not receive revised coding, it could limit this product's adoption by home medical equipment providers and also our direct rentals until revisions are made to the product to meet the coding requirements. For a discussion of certain significant risks relating to the TAV reimbursement and the upcoming round of competitive bidding, please see the risk factor entitled "The competitive bidding process under Medicare could negatively affect our business and financial condition."

We have been developing and refining the manufacturing of our Inogen One systems since 2004. While nearly all of our manufacturing and assembly processes were originally outsourced, assembly of the compressors, sieve beds, concentrators and certain manifolds were brought in-house in order to improve quality control and reduce cost. In support of our European sales, we have an office in the Netherlands for sales, customer service, and repairs, and use a contract manufacturer located in the Czech Republic to manufacture high volume products to improve delivery to our European accounts. We expect to maintain our assembly operations for our products at our facilities in Richardson, Texas and Goleta, California. In 2020, we are focused on reducing the cost of our Inogen One G5 product, expanding manufacturing of the TAV product, and increasing the robustness of our supply chain to reduce potential component constraints as we grow our business.

We also use lean manufacturing practices to maximize manufacturing efficiency. We rely on third-party manufacturers to supply several components of our products. We typically enter into master service agreements for these components that specify quantity and quality requirements and delivery terms. In certain cases, these agreements can be terminated by either party upon relatively short notice. We have elected to source certain key components from single sources of supply, including our batteries, motors, valves, columns, and some molded plastic components. We believe that maintaining a single source of supply allows us to control production costs and inventory levels and to manage component quality. In order to mitigate against the risks related to a single source of supply, for certain components we qualify alternative suppliers and develop contingency plans for responding to disruptions. However, any reduction or halt in supply from one of these single-source suppliers could limit our ability to manufacture our products or devices until a replacement supplier is found and qualified. For additional discussion of potential risks related our manufacturing and raw materials, please see the risk factor entitled "*We obtain some of the components, subassemblies and completed products included in our products from a single source or a limited group of manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays, an inability to meet customer demand, substantial loss in revenue, and an adverse effect on our financial condition and results of operations.*"

Historically, we have generated a majority of our revenue from sales and rentals to customers in the United States. In the years ended December 31, 2019, 2018 and 2017, approximately 21.5%, 21.6% and 22.3%, respectively, of our total revenue was from sales to customers outside the United States, primarily in Europe. Approximately 70.2%, 74.8% and 73.5% of the non-U.S. revenue for the years ended December 31, 2019, 2018 and 2017, respectively, was invoiced in Euros with the remainder invoiced in United States dollars. We sell our products in 46 countries outside the United States through our wholly-owned subsidiary, distributors or directly to large "house" accounts, which include gas companies, HME oxygen providers, and resellers. In those instances, we sell to and bill the distributor or "house" accounts directly, leaving responsibility for the patient billing, support and clinical setup to the local provider.

Our total revenue was \$361.9 million, \$358.1 million and \$249.4 million for the years ended December 31, 2019, 2018 and 2017, respectively. The increase in total revenue in the year ended December 31, 2019 compared to the prior year was primarily due to growth in sales revenue associated with the increases in direct-to-consumer and international business-to-business sales, partially offset by a decline in domestic business-to-business sales. The increase in total revenue in the year ended December 30, 2018 compared to the prior year was primarily due to growth in sales revenue associated with the increases in direct-to-consumer and business-to-business sales. We generated net income of \$21.0 million, \$51.8 million and \$21.0 million in the years ended December 31, 2019, 2018 and 2017, respectively. We generated Adjusted EBITDA of \$43.3 million, \$61.3 million and \$50.8 million in the years ended December 31, 2019, 2018 and 2017, respectively (see “Non-GAAP financial measures” for reconciliations between U.S. GAAP and non-GAAP results). As of December 31, 2019, our retained earnings were \$81.4 million.

Sales revenue

Our future financial performance will be driven in part by the growth in sales of our Inogen One systems, and, to a lesser extent, sales of batteries, other accessories, our Inogen At Home stationary oxygen concentrators and the TAV products. We plan to grow our system sales in the coming years through multiple strategies including: hiring additional sales representatives, productivity improvements, investing in consumer awareness through increased marketing efforts, expanding our sales infrastructure and efforts outside of the United States, expanding our business-to-business sales through key partnerships, and enhancing our product offerings through additional product launches. While HME providers continue to convert and purchase portable oxygen concentrators, we expect growth could be challenged due to their ongoing restructuring efforts, lack of access to available credit, provider capital expenditure constraints, and pending competitive bidding Round 2021 with the lack of visibility to who will win contracts and any change in reimbursement rates. As our product offerings grow, we solicit feedback from our customers and focus our research and development efforts on continuing to improve patient preference and reduce the total cost of the product in order to further drive sales of our products.

Our direct-to-consumer sales process involves numerous interactions with the individual patient, their physician and the physician’s staff, and includes an in-depth analysis and review of our product, the patient’s diagnosis and prescribed oxygen or NIV therapy, including procuring an oxygen prescription. The patient may consider whether to finance the product through an Inogen-approved third-party or purchase the equipment. Product is not deployed until both the prescription and payment are received. Once a full system is deployed, the patient has 30 calendar days to return the product, subject to the payment of a minimal processing and handling fee. Approximately 7-11% of consumers who purchase a system return the system during this 30-day return period.

Our business-to-business efforts are focused on selling to distributors, HME oxygen and NIV providers, our private label partner and resellers, who are based inside and outside of the United States. This process involves interactions with various key customer stakeholders including sales, purchasing, product testing, and clinical personnel. Businesses that have patient demand that can be met with our products place purchase orders to secure product deployment. This may be influenced based on outside factors, including the result of tender offerings, changes in insurance plan coverage, business restructuring activities toward a non-delivery model, capital constraints, and overall changes in the net long-term oxygen and NIV therapy patient populations. Products are shipped freight on board (FOB) Inogen dock domestically, and based on financial history and profile, businesses may either prepay or receive extended payment terms. Products are shipped both FOB Inogen dock and Delivery Duty Paid (DDP) for certain international shipments depending on the shipper used. DDP shipments are Inogen’s property until title has transferred which is upon duty being paid and delivered to the customer. As a result of these factors, product purchases can be subject to changes in demand by customers.

We sold approximately 201,100 systems in 2019, 198,600 systems in 2018 and 128,000 systems in 2017. Management focuses on system sales as an indicator of current business success.

Rental revenue

Our direct-to-consumer rental process involves numerous interactions with the individual patient, their physician and the physician’s staff. The process includes an in-depth analysis and review of our product, the patient’s diagnosis and prescribed oxygen or NIV therapy, and their medical history to confirm the appropriateness of our product for the patient’s oxygen therapy and compliance with Medicare and private payor billing requirements, which often necessitates additional physician evaluation and/or testing as well as a Certificate of Medical Necessity for oxygen. Once the product is deployed, the patient receives instruction on product use and may receive a clinical titration from our licensed staff to confirm the product meets the patient’s medical oxygen needs prior to billing. As a result, the period of time from initial contact with a patient to billing can vary significantly and be up to one month or longer.

Rental revenue declined slightly in 2019 as compared to 2018 in spite of the minor change that we made in the second quarter of 2019 to reduce our intake criteria for new rental patients. We expect rental revenue to increase modestly in 2020 as we scale the rental intake team, increase new rental setups, and benefit from the Medicare reimbursement rates for oxygen therapy increasing 1.5% to 3.5% effective January 1, 2020. We plan to add new rental patients on service in future periods through multiple strategies, including expanding our rental intake team, expanding our direct-to-consumer marketing efforts, investing in patient and physician awareness, and securing additional insurance contracts.

However, insurance reimbursement rates may decline associated with Round 2021 competitive bidding or due to changes in reimbursement from non-Medicare payors. In addition, patients may come off our services due to death, a change in their condition, a change in location, a change in healthcare provider or other factors. In each case, we maintain rental asset ownership and can redeploy assets as appropriate following such events. Given the length and uncertainty of our patient acquisition cycle and potential returns we have experienced in the past and likely will experience in the future, fluctuations in our net new patient setups will occur on a period-to-period basis and we may experience net patient decreases in future periods. At this time, we do not plan to offer our Inogen One G5 or Inogen One G4 systems to our rental patients but will continue to use the Inogen One G3 system as the primary ambulatory solution deployed in our rental fleet. Eventually, we do plan to use the Inogen One G5 system in our rental fleet once production of the Inogen One G3 system is discontinued.

A portion of rentals include a capped rental period during which no additional reimbursement is allowed unless additional criteria are met. In this scenario, the ratio of billable patients to total patients on service is critical to maintaining rental revenue growth as patients on service increases. Medicare has noted a certain percentage of beneficiaries, approximately 25%, based on their review of Medicare claims, reach the 36th month of eligible reimbursement and enter the capped rental period. The percentage of capped patients may fluctuate over time as new patients come on service, patients come off of service before and during the capped rental period, and existing patients enter the capped rental period.

We had approximately 25,300, 26,900 and 30,700 oxygen rental patients as of December 31, 2019, 2018 and 2017, respectively. Management focuses on patients on service as a leading indicator of likely future rental revenue; however, actual rental revenue recognized is subject to a variety of other factors, including reimbursement levels by payor, patient location, the number of capped patients, write-offs for uncollectable balances, and rental revenue adjustments.

Reimbursement

We rely heavily on reimbursement from Medicare, and secondarily, from Medicaid and private payors, including Medicare Advantage plans, Medicaid and patients for our rental revenue. A discussion of third-party reimbursement is contained in Item 1, *Third-party reimbursement* in this Annual Report on Form 10-K.

For the years ended December 31, 2019, 2018 and 2017, approximately 81.1%, 78.0% and 73.0%, respectively, of our rental revenue was derived from Medicare's traditional fee-for-service reimbursement programs. The U.S. list price for our stationary oxygen rentals (HCPCS E1390) is \$260 per month and the U.S. list price for our oxygen generating portable equipment (OGPE) rentals (HCPCS E1392) is \$70 per month. The average Medicare reimbursement rates in competitive bidding areas in 2018 were \$77.03 a month for E1390 and \$36.06 a month for E1392. Effective January 1, 2019 the average Medicare reimbursement rates in former competitive bidding areas decreased to \$72.92 a month for E1390 and \$35.72 a month for E1392. Effective January 1, 2020, the average Medicare reimbursement rates were increased by 1.5% to \$73.98 a month for E1390 and \$36.25 a month for E1392 in these regions that were previously subject to competitive bidding. In addition, the average Medicare reimbursements rates in non-rural, non-former competitive bidding areas increased by 3.5% to \$74.84 a month for E1390 and \$36.87 a month for E1392. These are the two primary codes that we bill to Medicare and other payors for our oxygen product rentals. We do not offer our TAV non-invasive ventilator for reimbursement as we do not have HCPCS coding for this product.

Basis of presentation

The following describes the line items set forth in our consolidated statements of comprehensive income.

Revenue

We classify our revenue in two main categories: sales revenue and rental revenue. There will be fluctuations in mix between business-to-business sales, direct-to-consumer sales and rental revenue from period-to-period. Product selling prices and gross margins may fluctuate as we introduce new products, reduce our product costs, have changes in purchase volumes, and as currency variations occur. For example, the gross margin for our Inogen One G4 system is higher than our Inogen One G3 system due to lower manufacturing costs and similar average selling prices. Thus, to the extent our sales of our Inogen One G4 systems are higher than sales of our Inogen One G3 systems, our overall gross margins should improve and, conversely, to the extent our sales of our Inogen One G3 systems are higher than sales of our Inogen One G4 systems, our overall gross margins should decline. Quarter-over-quarter results may vary due to seasonality in both the international and domestic markets, as discussed in Item 1. *Seasonality* and elsewhere in this Annual Report on Form 10-K.

Sales revenue

Our sales revenue is primarily derived from the sale of our Inogen One systems, Inogen At Home systems, TAV systems, and related accessories to individual consumers, our private label partner, HME providers, distributors and resellers worldwide. Sales revenue is classified into two areas: business-to-business sales and direct-to-consumer sales. Generally, our direct-to-consumer sales have higher gross margins than our business-to-business sales.

Rental revenue

Our rental revenue is primarily derived from the rental of our Inogen One and Inogen At Home systems to patients through reimbursement from Medicare, private payors and Medicaid, which typically also includes a patient responsibility component for patient co-insurance and deductibles. Rental revenue decreased slightly in 2019 in spite of the minor change that we made in the second quarter of 2019 to loosen our intake criteria for new rental patients that we made in the second half of 2019, primarily due to lower net rental setups due to reduced sales capacity, an additional 3.9% reduction in Medicare reimbursement rates for our products effective January 1, 2019 and the adoption of ASU No. 2018-19 that required reclassification of rental bad debt expense to be charged against rental revenue. We expect our rental revenue to modestly increase in 2020 as we scale the rental intake team, increase new rental setups, and benefit from the Medicare reimbursement rates for oxygen therapy increasing 1.5% to 3.5%, effective January 1, 2020. We also expect that our rental revenue will be impacted by the number of sales representatives, the number of rental intake representatives, reimbursement rate changes including the impact of Round 2021 competitive bidding, the level of and response from potential customers to direct-to-consumer marketing spend, product launches, and other uncontrollable factors such as changes in the market and competition.

Cost of revenue

Cost of sales revenue

Cost of sales revenue consists primarily of costs incurred in the production process, including component materials, assembly labor and overhead, warranty, provisions for slow-moving and obsolete inventory, rework and delivery costs for items sold. Labor and overhead expenses consist primarily of personnel-related expenses, including wages, bonuses, benefits, and stock-based compensation for manufacturing, logistics, repair, manufacturing engineering, and quality assurance employees, and temporary labor. Cost of sales revenue also includes manufacturing freight in, depreciation expense, facilities costs and materials. We provide a 3-year, 5-year or lifetime warranty on Inogen One systems sold and a 3-year and lifetime warranty on Inogen At Home systems sold. The TAV system has a 1-year and a 3-year warranty. We establish a reserve for the cost of future warranty repairs based on historical warranty repair costs incurred as well as historical failure rates. Provisions for warranty obligations, which are included in cost of sales revenue, are provided for at the time of revenue recognition.

We continue to make progress towards reducing the average unit costs of our products as a result of our ongoing efforts to develop lower-cost systems, negotiate with our suppliers, improve our manufacturing processes, and increase production volume and yields.

At the same time, recent United States policies related to global trade and tariffs may also increase our average unit cost. The current economic environment has introduced greater uncertainty with respect to potential trade regulations, including changes to United States policies related to global trade and tariffs. We continue to monitor the Section 301 tariffs being imposed by the United States on certain imported Chinese materials and products in addition to potential retaliatory responses from other nations. In 2019, the impact of the China Tariffs on our financial results was minimal as we have received some exemptions, negotiated cost sharing and price reductions with suppliers, and re-allocated purchases. Assuming the Chinese tariffs stay at the current levels, we currently expect the overall financial impact to our business to be minimal to the average unit cost for 2020.

We expect the TAV system to have a higher sales gross margin than our existing oxygen therapy products.

For these reasons, we expect sales gross margin percentage to fluctuate over time based on the sales channel mix, product mix, and changes in average selling prices and cost per unit.

Cost of rental revenue

Cost of rental revenue consists primarily of depreciation expense; service costs for rental patients, including rework costs, material, labor, freight, and consumable disposables; and logistics costs.

We expect rental gross margin percentage to increase in 2020 compared to 2019, primarily associated with higher rental revenue per patient. We expect the average cost of rental revenue per patient to decline in future periods as a result of our ongoing efforts to reduce average unit cost of our systems, as well as reductions in depreciation, service costs, and logistics costs.

Operating expense

Research and development

Our research and development expense consists primarily of personnel-related expenses, including wages, bonuses, benefits and stock-based compensation for research and development and engineering employees, facility costs, laboratory supplies, product development materials, consulting fees and related costs, and testing costs for new product launches as well as enhancements to existing products. We have made substantial investments in research and development since our inception. Our research and development efforts have focused primarily on the tasks required to enhance our technologies and to support development and commercialization of new and existing products. Beginning in the third quarter of 2019, research and development expense also includes intangible amortization costs associated with the New Aera acquisition, which is expected to substantially increase our research and development expense in 2020 through 2028 by approximately \$7.8 million per year and \$4.9 million in 2029.

We plan to continue to invest in research and development activities to stay at the forefront of patient preference in oxygen therapy and non-invasive ventilation devices. We expect research and development expense to increase in absolute dollars in future periods as we continue to invest in our engineering and technology teams to support our new and enhanced product research and development efforts and manufacturing improvements. We expect increased research and development costs associated with the New Aera acquisition to incorporate the TAV technology into our oxygen concentrator and new non-invasive ventilator product portfolios as well as intangible amortization costs.

Sales and marketing

Our sales and marketing expense primarily supports our direct-to-consumer sales and rental strategy and consists mainly of personnel-related expenses, including wages, bonuses, commissions, benefits, and stock-based compensation for sales, marketing, customer service, rental intake, and clinical service employees. It also includes expenses for media and advertising, printing, informational kits, dues and fees, credit card fees, recruiting, training, sales promotional and marketing activities, travel and entertainment expenses as well as allocated facilities costs. Sales and marketing expense increased throughout 2019 as compared to 2018, primarily due to an increase in marketing expenses, partially offset by reduced personnel-related expenses for lower sales representative headcount. The increase in marketing expense was primarily due to higher cost per generated lead. We have restarted our sales capacity expansion efforts, but we plan to hire additional sales representatives at a more controlled pace across all of our facilities to expand sales capacity. We still expect a further increase in sales and marketing expense in future periods as we continue to invest in our business, including expanding our sales and sales support team, increasing media spend to drive consumer awareness, and rising patient support costs as our patient and customer base increases. We also expect increased sales and marketing costs in 2020 associated with the expanded launch of the TAV product following the limited launch in 2019.

General and administrative

Our general and administrative expense consists primarily of personnel-related expenses, including wages, bonuses, benefits, and stock-based compensation for employees in our compliance, finance, medical billing, order intake, human resources, and information technology departments as well as facilities costs, sales bad debt expense, and board of directors' expenses, including stock-based compensation. In addition, general and administrative expense includes professional services, such as legal, patent registration and defense costs, insurance, consulting and accounting services, including audit and tax services, and travel and entertainment expenses.

We expect general and administrative expense to increase in future periods as the number of administrative personnel grows and we continue to introduce new products, broaden our customer base and grow our business. We expect general and administrative expense to increase in absolute dollars as we continue to invest in corporate infrastructure to support our growth including personnel-related expenses, professional services fees and compliance costs associated with operating as a public company. Those costs include increases in our accounting, human resources, and IT personnel, as well as increases in additional consulting, legal and accounting fees, facilities costs, insurance costs, and board of directors' compensation.

Other income (expense), net

Our other income (expense), net consists primarily of interest income earned on cash equivalents and marketable securities as well as foreign currency gains and (losses).

Income taxes

We account for income taxes in accordance with Accounting Standards Codification (ASC) 740—*Income Taxes*. Under ASC 740, income taxes are recognized for the amount of taxes payable or refundable for the current period and deferred tax liabilities and assets are recognized for the future tax consequences of transactions that have been recognized in our consolidated financial statements or tax returns. A valuation allowance is provided when it is more likely than not that some portion, or all, of the deferred tax asset will not be realized.

We account for uncertainties in income tax in accordance with ASC 740-10—*Accounting for Uncertainty in Income Taxes*. ASC 740-10 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. This accounting standard also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The accounting for stock-based compensation will increase or decrease our effective tax rate based upon the difference between our stock-based compensation expense and the deductions taken on our U.S. tax return, which depends upon the stock price at the time of employee option exercise or award vesting. We recognize excess tax benefits or deficiencies on a discrete basis, and we anticipate our effective tax rate will vary from quarter-to-quarter depending on our stock price in each period.

Results of operations

Comparison of years ended December 31, 2019 and 2018

Revenue

	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
(amounts in thousands)						
Sales revenue	\$ 340,546	\$ 336,015	\$ 4,531	1.3 %	94.1 %	93.8 %
Rental revenue	21,397	22,096	(699)	-3.2 %	5.9 %	6.2 %
Total revenue	<u>\$ 361,943</u>	<u>\$ 358,111</u>	<u>\$ 3,832</u>	<u>1.1 %</u>	<u>100.0 %</u>	<u>100.0 %</u>

Sales revenue increased \$4.5 million for the year ended December 31, 2019 from the year ended December 31, 2018, or an increase of 1.3% over the comparable year. The increase was primarily attributable to a 2,500-unit increase in the number of oxygen systems sold. We sold approximately 201,100 oxygen systems during the year ended December 31, 2019 compared to approximately 198,600 oxygen systems sold during the year ended December 31, 2018, or an increase of 1.3%. The increase in the number of systems sold resulted mainly from an increase in direct-to-consumer sales in the United States, primarily due to increased marketing expenditures and increased sales representative productivity, partially offset by a decline in sales representative headcount. In addition, international business-to-business sales increased slightly, primarily from our partners in Canada, South America, and Australia, partially offset by a decline in sales to our partners in Europe primarily due to unfavorable currency rates and tender uncertainty in certain European regions. These increases were partially offset by a decline in domestic business-to-business sales, primarily due to reduced orders from a national provider who is a customer of our private label partner, partially offset by increased orders from other providers. This national provider accounted for revenue of \$2.5 million for the year ended December 31, 2019, down from \$22.9 million for the year ended December 31, 2018.

Rental revenue decreased \$0.7 million for the year ended December 31, 2019 from the year ended December 31, 2018, or a decrease of 3.2% from the comparable year. The decrease in rental revenue was primarily related to a 5.9% decline in rental patients on service from the comparative period and an additional 3.9% reduction in Medicare reimbursement rates for our products effective January 1, 2019 and the adoption of Accounting Standards Update (ASU) No. 2018-19 that required reclassification of rental bad debt expense to be charged against rental revenue.

(amounts in thousands)

Revenue by region and category	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Business-to-business domestic sales	\$ 106,428	\$ 116,581	\$ (10,153)	-8.7%	29.4%	32.5%
Business-to-business international sales	77,960	77,333	627	0.8%	21.5%	21.6%
Direct-to-consumer domestic sales	156,158	142,101	14,057	9.9%	43.2%	39.7%
Direct-to-consumer domestic rentals	21,397	22,096	(699)	-3.2%	5.9%	6.2%
Total revenue	<u>\$ 361,943</u>	<u>\$ 358,111</u>	<u>\$ 3,832</u>	<u>1.1%</u>	<u>100.0%</u>	<u>100.0%</u>

Domestic business-to-business sales decreased 8.7% for the year ended December 31, 2019 compared to the year ended December 31, 2018. The decrease was primarily the result of decreased demand from our private label partner due to reduced orders from the large national provider referenced above, partially offset by increased demand from traditional HME providers.

Business-to-business international sales increased slightly by 0.8% for the year ended December 31, 2019 compared to the year ended December 31, 2018, primarily due to increased sales to our partners in Canada, South America, and Australia, partially offset by a decline in sales to our partners in Europe primarily due to unfavorable currency exchange rates and tender uncertainty in certain European regions. In the year ended December 31, 2019, sales in Europe as a percentage of total international sales revenue decreased to 86.4% versus 88.3% in the comparative period in 2018, primarily because of the increase in sales in Canada, South America, and Australia and reduced sales in Europe.

Domestic direct-to-consumer sales increased 9.9% for the year ended December 31, 2019 compared to the year ended December 31, 2018, primarily due to increased marketing expenditures and increased productivity of inside sales representatives, partially offset by a decline in sales representative headcount.

Cost of revenue and gross profit

(amounts in thousands)	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Cost of sales revenue	\$ 175,974	\$ 163,989	\$ 11,985	7.3%	48.6%	45.8%
Cost of rental revenue	14,108	15,542	(1,434)	-9.2%	3.9%	4.3%
Total cost of revenue	<u>\$ 190,082</u>	<u>\$ 179,531</u>	<u>\$ 10,551</u>	<u>5.9%</u>	<u>52.5%</u>	<u>50.1%</u>
Gross profit - sales revenue	\$ 164,572	\$ 172,026	\$ (7,454)	-4.3%	45.5%	48.0%
Gross profit - rental revenue	7,289	6,554	735	11.2%	2.0%	1.9%
Total gross profit	<u>\$ 171,861</u>	<u>\$ 178,580</u>	<u>\$ (6,719)</u>	<u>-3.8%</u>	<u>47.5%</u>	<u>49.9%</u>
Gross margin percentage - sales revenue	48.3%	51.2%				
Gross margin percentage- rental revenue	34.1%	29.7%				
Total gross margin percentage	47.5%	49.9%				

Cost of sales revenue increased \$12.0 million for the year ended December 31, 2019 from the year ended December 31, 2018, or an increase of 7.3% over the comparable year. The increase in cost of sales revenue was primarily attributable to labor and overhead expenses, product and sales channel mix, as well as higher cost per unit associated with the Inogen One G5 during the period.

Cost of rental revenue decreased \$1.4 million for the year ended December 31, 2019 from the year ended December 31, 2018, or a decrease of 9.2% from the comparable year. The decrease in cost of rental revenue was primarily attributable to a 5.9% decrease in total patients on service and reduced rental asset depreciation expense and logistics costs, partially offset by increased servicing costs per patient on service. Cost of rental revenue included \$6.3 million of rental asset depreciation for the year ended December 31, 2019 compared to \$7.6 million for the year ended December 31, 2018.

Sales revenue gross margin percentage decreased to 48.3% for the year ended December 31, 2019 from 51.2% for the year ended December 31, 2018. The decrease in sales gross margin percentage was primarily related to higher cost of goods sold. Total worldwide business-to-business sales revenue accounted for 54.1% of total sales revenue in the year ended December 31, 2019 versus 57.7% in the year ended December 31, 2018.

Rental revenue gross margin percentage increased to 34.1% for the year ended December 31, 2019 from 29.7% for the year ended December 31, 2018, primarily due to higher rental revenue per patient on service and lower depreciation and logistics costs, partially offset by increased servicing costs per patient on service.

Research and development expense

(amounts in thousands)	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Research and development expense	\$ 9,401	\$ 7,029	\$ 2,372	33.7%	2.6%	2.0%

Research and development expense increased \$2.4 million for the year ended December 31, 2019 from the year ended December 31, 2018, or an increase of 33.7% over the comparable period, primarily due to \$2.9 million in intangible amortization costs related to the New Aera acquisition, partially offset by a \$0.8 million decrease in personnel-related expenses.

Sales and marketing expense

(amounts in thousands)	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Sales and marketing expense	\$ 105,550	\$ 95,641	\$ 9,909	10.4%	29.2%	26.7%

Sales and marketing expense increased \$9.9 million for the year ended December 31, 2019 from the year ended December 31, 2018, or an increase of 10.4% over the comparable period. The increase was primarily attributable to increases of \$9.5 million in media spending, \$1.3 million of dues, fees and license costs, \$0.5 million in facilities costs, and \$0.4 million in incentives and giveaways. These increases were partially offset by \$2.4 million of lower personnel-related expenses. In the year ended December 31, 2019, we spent \$40.3 million in media and advertising costs versus \$30.8 million in the comparative period in 2018.

General and administrative expense

(amounts in thousands)	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
General and administrative expense	\$ 37,121	\$ 38,018	\$ (897)	-2.4%	10.2%	10.6%

General and administrative expense decreased \$0.9 million for the year ended December 31, 2019 from the year ended December 31, 2018, or a decrease of 2.4% from the comparable period. The decrease was primarily attributable to decreases of \$3.2 million in personnel-related expenses, \$1.5 million in bad debt expense and \$0.3 million in general office expense. These decreases were partially offset by \$1.2 million in legal fees, \$0.8 million in acquisition-related expenses for the New Aera transaction, \$0.8 million of expense related to the change in fair value of the New Aera earnout liability, \$0.6 million in license fees, \$0.4 million in depreciation expense, and \$0.3 million in lower net proceeds received from sale of assets.

Bad debt expense, expressed as a percentage of total revenue, decreased to 0.0% in the year ended December 31, 2019 from 0.5% in the year ended December 31, 2018, primarily due to the adoption of ASU 2018-19.

Other income (expense), net

(amounts in thousands)	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Interest income	\$ 4,712	\$ 3,259	\$ 1,453	44.6%	1.3%	0.9%
Other expense	(229)	(696)	467	-67.1%	-0.1%	-0.2%
Total other income, net	\$ 4,483	\$ 2,563	\$ 1,920	74.9%	1.2%	0.7%

Total other income, net increased \$1.9 million for the year ended December 31, 2019 from the year ended December 31, 2018, or an increase of 74.9% over the comparable period. The increase was primarily attributable to increases of \$1.2 million in interest income on cash equivalents and marketable securities and \$0.2 million in interest income on the lease asset, partially offset by a decrease of \$0.5 million in other expense primarily related to net foreign currency losses arising from increased transactions in Euros at a lower U.S. dollar exchange rate to the Euro compared to the comparable period.

Income tax expense (benefit)

<i>(amounts in thousands)</i>	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Income tax expense (benefit)	\$ 3,322	\$ (11,390)	\$ 14,712	129.2%	0.9%	-3.2%
Effective income tax rate	13.7%	-28.2%				

Income tax expense increased \$14.7 million for the year ended December 31, 2019 from the year ended December 31, 2018, primarily attributable to \$20.7 million of lower excess tax benefits recognized from stock-based compensation, partially offset by a \$6.0 million decrease in the income tax provision expense, primarily resulting from a 40.0% decrease in income before income tax expense (benefit) and research and development credits.

Our effective tax rate in the year ended December 31, 2019 increased compared to the year ended December 31, 2018, primarily due to the decrease in excess tax benefits recognized from stock-based compensation, partially offset by the changes in income before income tax expense (benefit) and research and development credits. In the year ended December 31, 2019, excess tax benefits recognized from stock-based compensation decreased our income tax expense by \$0.5 million and our effective tax rate by 2.0%, as compared to the tax rate without such benefits. For comparison, in the year ended December 31, 2018, excess tax benefits recognized from stock-based compensation decreased our income tax expense by \$21.2 million and our effective tax rate by 52.5%, as compared to the tax rate without such benefits.

Net income

<i>(amounts in thousands)</i>	Years ended December 31,		Change 2019 vs. 2018		% of Revenue	
	2019	2018	\$	%	2019	2018
Net income	\$ 20,950	\$ 51,845	\$ (30,895)	-59.6%	5.8%	14.5%

Net income decreased \$30.9 million for the year ended December 31, 2019 from the year ended December 31, 2018, or a decrease of 59.6% from the comparable period. The decrease in net income was primarily related to lower gross margin, an increase in operating expenses and a higher effective tax rate.

Seasonality

We believe our sales may be impacted by seasonal factors. For example, we typically experience higher total sales in the second and third quarters, as a result of consumers traveling and vacationing during warmer weather in the spring and summer months, but this may vary year-over-year. As more HME providers adopt portable oxygen concentrators in their businesses, we expect that this could change our historical seasonality in the domestic business-to-business channel, which was previously influenced mainly by consumer buying patterns. Direct-to-consumer sales seasonality may also be impacted by the number of sales representatives and the amount of marketing spend in each quarter.

The following tables set forth our unaudited quarterly consolidated statements of comprehensive income data for each of the eight quarters in the period ended December 31, 2019. We have prepared the quarterly statements of income data on a basis consistent with the audited consolidated financial statements included in Part II, Item 8, "Financial Statements and Supplementary Data" in this Annual Report on Form 10-K. In the opinion of management, the financial information reflects all adjustments, consisting only of normal recurring adjustments, which we consider necessary for a fair presentation of this data. This information should be read in conjunction with the audited consolidated financial statements and related notes included in Part II, Item 8, "Financial Statements and Supplementary Data" in this Annual Report on Form 10-K. The results of historical periods are not necessarily indicative of the results of operations for any future period.

(amounts in thousands, except share and per share amounts)

Quarterly Results 2019	Q1 March	Q2 June	Q3 September	Q4 December
Total revenue	\$ 90,202	\$ 101,063	\$ 91,761	\$ 78,917
Gross profit	44,409	50,215	43,315	33,922
Income (loss) before provision (benefit) for income taxes	6,072	13,684	8,753	(4,237)
Provision (benefit) for income taxes	770	3,524	1,890	(2,862)
Net income (loss)	5,302	10,160	6,863	(1,375)
Net income (loss) per share attributable to common stockholders:				
Basic	\$ 0.24	\$ 0.47	\$ 0.31	\$ (0.06)
Diluted (1)	\$ 0.24	\$ 0.45	\$ 0.31	\$ (0.06)
Weighted-average number of shares used in calculating net income (loss) per share attributable to common stockholders:				
Basic common shares	21,750,305	21,815,634	21,840,473	21,878,004
Diluted common shares	22,534,885	22,359,679	22,191,688	21,878,004

(1) Due to net loss for period Q4 December, dilutive loss per share is the same as basic.

(amounts in thousands, except share and per share amounts)

Quarterly Results 2018	Q1 March	Q2 June	Q3 September	Q4 December
Total revenue	\$ 79,051	\$ 97,238	\$ 95,291	\$ 86,531
Gross profit	37,727	48,470	48,813	43,570
Income before benefit for income taxes	9,687	13,646	11,299	5,823
Benefit for income taxes	(1,071)	(964)	(5,133)	(4,222)
Net income	10,758	14,610	16,432	10,045
Net income per share attributable to common stockholders:				
Basic	\$ 0.51	\$ 0.69	\$ 0.77	\$ 0.47
Diluted	\$ 0.48	\$ 0.65	\$ 0.73	\$ 0.44
Weighted-average number of shares used in calculating net income per share attributable to common stockholders:				
Basic common shares	21,026,154	21,172,170	21,324,256	21,544,202
Diluted common shares	22,295,213	22,503,749	22,659,052	22,600,038

Comparison of years ended December 31, 2018 and 2017

A discussion of changes in our results of operations during the year ended December 31, 2018 compared to the year ended December 31, 2017 has been omitted from this Annual Report on Form 10-K, but may be found in "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report on Form 10-K for the year ended December 31, 2018, filed with the SEC on February 26, 2019, which discussion is incorporated herein by reference and which is available free of charge on the SEC's website at www.sec.gov.

Liquidity and capital resources

As of December 31, 2019, we had cash and cash equivalents of \$198.0 million, which consisted of highly-liquid investments with a maturity of three months or less. In addition, we held marketable securities of \$11.1 million in available-for-sale corporate bonds and U.S. Treasury securities, which had maturities greater than three months. Since inception, we have received net proceeds of \$91.7 million from the issuance of redeemable convertible preferred stock and convertible preferred stock and \$52.5 million (\$49.7 million net proceeds) in connection with the sale of common stock in our initial public offering. Since 2013, we have received \$51.1 million from proceeds related to stock option exercises and our employee stock purchase plan. For the years ended December 31, 2019, 2018 and 2017, we received \$5.9 million, \$19.5 million and \$14.0 million, respectively, in proceeds related to these stock programs.

Our principal uses of cash for liquidity and capital resources in the year ended December 31, 2019 consisted of payment for the New Aera acquisition of \$70.4 million (net of cash acquired) and capital expenditures of \$6.5 million including additional rental equipment, intangible assets, and other property, plant and equipment.

We believe that our current cash, cash equivalents, marketable securities, and the cash to be generated from expected product sales and rentals will be sufficient to meet our projected operating and investing requirements for at least the next twelve months. However, our liquidity assumptions may prove to be incorrect, and we could utilize our available financial resources sooner than we currently expect. Our future funding requirements will depend on many factors, including market acceptance of our products; the cost of our research and development activities; payments from customers; the cost, timing, and outcome of litigation or disputes involving intellectual property rights, our products, employee relations, cyber security incidents, or otherwise; the cost and timing of acquisitions; the cost and timing of regulatory clearances or approvals; the cost and timing of establishing additional sales, marketing, and distribution capabilities; and the effect of competing technological and market developments. In the future, we may acquire businesses or technologies from third parties, and we may decide to raise additional capital through debt or equity financing to the extent we believe this is necessary to successfully complete these acquisitions. Our future capital requirements will also depend on many additional factors, including those set forth in the section of this Annual Report on Form 10-K entitled "Risk Factors."

If we require additional funds in the future, we may not be able to obtain such funds on acceptable terms, or at all. In the future, we may also attempt to raise additional capital through the sale of equity securities or through equity-linked or debt financing arrangements. If we raise additional funds by issuing equity or equity-linked securities, the ownership of our existing stockholders will be diluted. If we raise additional financing by the incurrence of indebtedness, we will be subject to increased fixed payment obligations and could also be subject to restrictive covenants, such as limitations on our ability to incur additional debt, and other operating restrictions that could adversely impact our ability to conduct our business. Any future indebtedness we incur may result in terms that could be unfavorable to equity investors. There can be no assurances that we will be able to raise additional capital, which would adversely affect our ability to achieve our business objectives. In addition, if our operating performance during the next twelve months is below our expectations, our liquidity and ability to operate our business could be adversely affected.

The following tables show a summary of our cash flows and working capital for the periods and as of the dates indicated:

(amounts in thousands)

Summary of consolidated cash flows	Years ended December 31,		
	2019	2018	2017
Cash provided by operating activities	\$ 40,593	\$ 59,977	\$ 60,494
Cash used in investing activities	(44,057)	(24,965)	(24,430)
Cash provided by financing activities	4,929	18,296	14,004
Effect of exchange rates on cash	(62)	373	34
Net increase in cash and cash equivalents	\$ 1,403	\$ 53,681	\$ 50,102

(amounts in thousands)

	December 31,	
	2019	2018
Working capital		
Cash and cash equivalents	\$ 198,037	\$ 196,634
Marketable securities	11,057	43,715
Accounts receivable, net	34,325	37,041
Inventories, net	35,664	27,071
Income tax receivable	2,976	2,655
Prepaid expenses and other current assets	10,160	7,467
Total current assets	292,219	314,583
Accounts payable and accrued expenses	30,730	26,786
Accrued payroll	6,215	11,407
Warranty reserve - current	4,923	3,549
Operating lease liability - current	2,014	—
Deferred revenue - current	5,478	4,451
Income tax payable	821	392
Total current liabilities	50,181	46,585
Net working capital	\$ 242,038	\$ 267,998

Operating activities

We derive operating cash flows from cash collected from the sales and rental of our products and services. These cash flows received are partially offset by our use of cash for operating expenses to support the growth of our business.

Net cash provided by operating activities for the year ended December 31, 2019 consisted primarily of our net income of \$21.0 million as well as non-cash expense items such as provision for sales returns and doubtful accounts of \$17.2 million, depreciation of equipment and leasehold improvements and amortization of our intangibles of \$13.8 million, stock-based compensation expense of \$9.1 million, deferred tax assets of \$2.9 million, provision for rental revenue adjustments of \$2.2 million, provision for inventory obsolescence and other inventory losses of \$1.0 million, change in fair value of earnout liability of \$0.8 million and net loss on disposal of rental equipment and other fixed assets of \$0.6 million. The net changes in operating assets and liabilities resulted in a net use of cash of \$27.9 million.

Net cash provided by operating activities for the year ended December 31, 2018 consisted primarily of our net income of \$51.8 million and non-cash expense items such as provision for sales returns and doubtful accounts of \$17.5 million, stock-based compensation expense of \$12.8 million, depreciation of equipment and leasehold improvements and amortization of our intangibles of \$11.3 million, provision for rental revenue adjustments of \$2.7 million, and loss on disposal of rental equipment and other fixed assets of \$1.2 million. These were partially offset by an increase in deferred tax assets of \$11.6 million and gain on sale of former rental assets of \$0.4 million. The net changes in operating assets and liabilities resulted in a net use of cash of \$25.6 million.

Net cash provided by operating activities for the year ended December 31, 2017 consisted primarily of our net income of \$21.0 million and non-cash expense items such as provision for sales returns and doubtful accounts of \$13.8 million, depreciation of our equipment and leasehold improvements and amortization of our intangibles of \$12.3 million, stock-based compensation expense of \$9.6 million, provision for rental revenue adjustments of \$5.1 million, deferred income tax of \$7.9 million and loss on disposal of rental equipment and other fixed assets of \$1.1 million. The net changes in operating assets and liabilities resulted in a net use of cash of \$10.6 million.

Investing activities

Net cash used in investing activities for each of the periods presented included cash used for acquisitions and in the production and purchase of rental assets, manufacturing tooling, and computer equipment and software to support our expanding business as well as net (purchases) maturities of marketable securities.

For the year ended December 31, 2019, we acquired New Aera for a net cash payment of \$70.4 million and invested \$58.7 million in corporate bonds and U.S. Treasury securities with maturities greater than three months that were classified as marketable securities, partially offset by \$91.4 million in maturities of marketable securities. In addition, we invested \$6.5 million in the production and purchase of rental assets and other property, equipment, leasehold improvements and intangible assets.

For the year ended December 31, 2018, we invested \$76.2 million in corporate bonds and U.S. Treasury securities with maturities greater than three months that were classified as marketable securities, partially offset by \$63.5 million in maturities of available-for-sale investments. In addition, we invested \$13.0 million in the production and purchase of rental assets, intangible assets and other property, equipment, and leasehold improvements, partially offset from gross proceeds received from the sale of former rental assets of \$0.7 million.

For the year ended December 31, 2017, we had \$46.9 million of purchases that we invested in available-for-sale certificates of deposits, corporate bonds, agency mortgage-backed securities, and U.S. treasury securities with maturities greater than three months that were classified as marketable securities, partially offset by \$37.0 million in maturities of available-for-sale investments. In addition, we invested \$10.2 million in the production and purchase of rental assets, intangibles assets and other property, equipment, leasehold improvements, and acquired MedSupport for a net cash payment of \$4.5 million, partially offset by gross proceeds from the sale of former assets of \$0.2 million.

We expect to continue investing in property, equipment and leasehold improvements as we expand our operations. Our business is inherently capital intensive. For example, we expend significant manufacturing and production expense in connection with the development and production of our oxygen concentrator products and, in connection with our rental business, we incur expense in the deployment of rental equipment to our patients. Investments will continue to be required in order to grow our sales and rental revenue and continue to supply and replace rental equipment to our rental patients on service.

Financing activities

Historically, we have funded our operations through our sales and rental revenue, the issuance of preferred and common stock, and the incurrence of indebtedness.

For the year ended December 31, 2019, net cash provided by financing activities consisted of \$5.9 million from the proceeds received from stock options that were exercised and purchases under our employee stock purchase program, partially offset by the payment of employment taxes related to the vesting of restricted stock awards and restricted stock units of \$0.9 million.

For the year ended December 31, 2018, net cash provided by financing activities consisted of \$19.5 million from the proceeds received from stock options that were exercised and purchases under our employee stock purchase program, partially offset by the payment of employment taxes related to the vesting of restricted stock awards and restricted stock units of \$1.2 million.

For the year ended December 31, 2017, net cash provided by financing activities consisted of \$14.0 million from the proceeds received from stock options that were exercised and purchases under our employee stock purchase program.

Sources of funds

Our cash provided by operating activities in the year ended December 31, 2019 was \$40.6 million compared to \$60.0 million in the year ended December 31, 2018. As of December 31, 2019, we had cash and cash equivalents of \$198.0 million.

Use of funds

Our principal uses of cash are funding our new rental asset deployments and other capital purchases, operations, and other working capital requirements and, from time-to-time, the acquisition of businesses. Over the past several years, our revenue has increased from year-to-year and, as a result, our cash flows from customer collections have increased as have our profits. Our annual cash provided by operating activities has generally increased over time and has been a significant source of capital to the business, which we expect to continue in the future.

We may need to raise additional funds to support our investing operations, and such funding may not be available to us on acceptable terms, or at all. If we are unable to raise additional funds when needed, our operations and ability to execute our business strategy could be adversely affected. We may seek to raise additional funds through equity, equity-linked or debt financings. If we raise additional funds through the incurrence of indebtedness, such indebtedness would have rights that are senior to holders of our equity securities and could contain covenants that restrict our operations. Any additional equity financing may be dilutive to our stockholders.

Non-GAAP financial measures

EBITDA, Adjusted EBITDA, and non-GAAP net income are financial measures that are not calculated in accordance with U.S. GAAP. We define EBITDA as net income excluding interest income, interest expense, taxes and depreciation and amortization. Adjusted EBITDA also excludes stock-based compensation and change in fair value of earnout liability. Non-GAAP net income, which we previously referred to as “Adjusted Net Income,” excludes certain tax adjustments. Below, we have provided a reconciliation of EBITDA, Adjusted EBITDA and non-GAAP net income to our net income, the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP. EBITDA, Adjusted EBITDA and non-GAAP net income should not be considered alternatives to net income or any other measure of financial performance calculated and presented in accordance with U.S. GAAP. Our EBITDA, Adjusted EBITDA and non-GAAP net income may not be comparable to similarly titled measures of other organizations because other organizations may not calculate EBITDA, Adjusted EBITDA and non-GAAP net income in the same manner as we calculate these measures.

We include EBITDA, Adjusted EBITDA and non-GAAP net income in this Annual Report on Form 10-K because they are important measures upon which our management assesses our operating performance. We use EBITDA, Adjusted EBITDA and non-GAAP net income as key performance measures because we believe they facilitate operating performance comparisons from period-to-period by excluding potential differences primarily caused by variations in capital structures, tax positions, the impact of depreciation and amortization expense on our fixed assets and intangible assets, the impact of stock-based compensation expense and the impact of the change in fair value of the earnout liability. Because EBITDA, Adjusted EBITDA and non-GAAP net income facilitate internal comparisons of our historical operating performance on a more consistent basis, we also use EBITDA, Adjusted EBITDA and non-GAAP net income for business planning purposes, to incentivize and compensate our management personnel, and in evaluating acquisition opportunities. In addition, we believe EBITDA, Adjusted EBITDA and non-GAAP net income and similar measures are widely used by investors, securities analysts, ratings agencies, and other parties in evaluating companies in our industry as a measure of financial performance and debt-service capabilities.

Our uses of EBITDA, Adjusted EBITDA and non-GAAP net income have limitations as analytical tools and should not be considered in isolation or as a substitute for analysis of our results as reported under U.S. GAAP. Some of these limitations are:

- EBITDA and Adjusted EBITDA do not reflect our cash expenditures for capital equipment or other contractual commitments;
- although depreciation and amortization are non-cash charges, the assets being depreciated and amortized may have to be replaced in the future, and EBITDA and Adjusted EBITDA do not reflect capital expenditure requirements for such replacements;
- EBITDA and Adjusted EBITDA do not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not include changes in fair value of earnout liability related to our acquisitions;
- Non-GAAP net income does not reflect the tax adjustments recorded based on U.S. GAAP; and
- other companies, including companies in our industry, may calculate EBITDA, Adjusted EBITDA and non-GAAP net income measures differently, which reduces their usefulness as a comparative measure.

In evaluating EBITDA, Adjusted EBITDA and non-GAAP net income, we anticipate that in the future we will incur expenses within these categories similar to this presentation. Our presentation of EBITDA, Adjusted EBITDA and non-GAAP net income should not be construed as an inference that our future results will be unaffected by certain expenses. When evaluating our performance, EBITDA, Adjusted EBITDA and non-GAAP net income should be considered alongside other financial performance measures, including U.S. GAAP results.

The following tables present a reconciliation of EBITDA, Adjusted EBITDA and non-GAAP net income to our net income, the most comparable U.S. GAAP measure, for each of the periods indicated:

(amounts in thousands)

Non-GAAP EBITDA and Adjusted EBITDA	Years ended December 31,		
	2019	2018	2017
Net income	\$ 20,950	\$ 51,845	\$ 21,002
Non-GAAP adjustments:			
Interest income	(4,712)	(3,259)	(765)
Provision (benefit) for income taxes	3,322	(11,390)	8,654
Depreciation and amortization	13,834	11,295	12,302
EBITDA (non-GAAP)	33,394	48,491	41,193
Stock-based compensation	9,129	12,790	9,640
Change in fair value of earnout liability	810	—	—
Adjusted EBITDA (non-GAAP)	\$ 43,333	\$ 61,281	\$ 50,833

(amounts in thousands)

Non-GAAP net income	Years ended December 31,		
	2019	2018	2017
Net income	\$ 20,950	\$ 51,845	\$ 21,002
Non-GAAP adjustment:			
2017 U.S. tax reform (TCJA)(1)	—	—	7,578
Non-GAAP net income	\$ 20,950	\$ 51,845	\$ 28,580

- (1) On December 22, 2017, the TCJA was enacted into law, which significantly changed existing U.S. tax law and included numerous provisions that impact our financial results. During the fourth quarter of 2017, we recorded an estimated one-time net charge due to the impact of changes in the tax rate, primarily on deferred tax assets. There were no related charges during the years ended December 31, 2018 and December 31, 2019.

Contractual obligations

The following table reflects a summary of our contractual obligations as of December 31, 2019.

Contractual Obligations	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating leases - properties and other (1)	\$ 7,250	\$ 2,228	\$ 2,888	\$ 2,134	\$ —
Non-cancelable contractual obligations (2)	1,035	578	457	—	—
Purchase obligations (3)	54,500	54,500	—	—	—
Total	\$ 62,785	\$ 57,306	\$ 3,345	\$ 2,134	\$ —

- (1) We lease manufacturing and office space in Richardson, TX, Goleta, CA, Smyrna, TN, Huntsville, AL, Aurora, CO, Cleveland, OH and Breukelen, Netherlands with terms that expire between 2020 and 2024 and miscellaneous office and processing equipment in Texas, California and Ohio with terms expiring between 2020 and 2023. This table does not include lease payments for additional operating leases for our new corporate headquarters in California and commercial and industrial space in Texas that have not yet commenced as of December 31, 2019, which have combined total minimum lease payments of \$27.2 million. These operating leases will commence in 2020 with a lease term of 10-11 years.
- (2) These obligations are for software licenses and maintenance agreements.
- (3) We obtain individual components for our products from a wide variety of individual suppliers. Consistent with industry practice, we acquire components through a combination of purchase orders, supplier contracts, and open orders based on projected demand information. Where appropriate, the purchases are applied to inventory component prepayments that are outstanding with the respective supplier.

As of December 31, 2019, we had noncurrent deferred tax liabilities of \$14.4 million which were netted in noncurrent deferred tax assets on the balance sheet. Additionally, as of December 31, 2019, we had gross unrecognized tax benefits of \$1.9 million. The table does not include any payments related to liabilities recorded for uncertain tax positions as we cannot make a reasonably reliable estimate as to the timing of any other payments. See Note 7 to our audited consolidated financial statements included elsewhere in this Annual Report on Form 10-K.

Critical accounting policies and significant estimates

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements which have been prepared in accordance with generally accepted accounting principles in the United States of America, or U.S. GAAP. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets and liabilities and related disclosure of contingent assets and liabilities, revenue and expenses at the date of the financial statements. Generally, we base our estimates on historical experience and on various other assumptions in accordance with U.S. GAAP that we believe to be reasonable under the circumstances. Actual results may differ from these estimates and such differences could be material to the financial position and results of operations.

Critical accounting policies and estimates are those that we consider the most important to the portrayal of our financial condition and results of operations because they require our most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. Our critical accounting policies and estimates include those related to:

- revenue recognition; and
- acquisitions and related acquired intangible assets and goodwill.

Revenue recognition

We generate revenue primarily from sales and rentals of our products. Our products consist of our proprietary line of oxygen concentrators and related accessories. Other revenue primarily comes from service contracts, replacement parts and freight revenue for product shipments.

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration we expect to receive in exchange for those products or services. Revenue from product sales is generally recognized upon shipment of the product but is deferred for certain transactions when control has not yet transferred to the customer.

Our product is generally sold with a right of return and we may provide other incentives, which are accounted for as variable consideration when estimating the amount of revenue to recognize. Returns and incentives are estimated at the time sales revenue is recognized. The provisions for estimated returns are made based on known claims and estimates of additional returns based on historical data and future expectations. Sales revenue incentives within our contracts are estimated based on the most likely amounts expected on the related sales transaction and recorded as a reduction to revenue at the time of sale in accordance with the terms of the contract. Accordingly, revenue is recognized net of allowances for estimated returns and incentives.

We also offer a lifetime warranty for direct-to-consumer sales of our portable oxygen concentrators. For a fixed price, we agree to provide a fully functional portable oxygen concentrator for the remaining life of the patient. Lifetime warranties are only offered to patients upon the initial sale of portable oxygen concentrators directly from us and are non-transferable. Lifetime warranties are considered to be a distinct performance obligation that are accounted for separately from its sale of portable oxygen concentrators with a standard warranty of three years.

The revenue is allocated to the distinct lifetime warranty performance obligation based on a relative stand-alone selling price (SSP) method. We have vendor-specific objective evidence of the selling price for our equipment. To determine the selling price of the lifetime warranty, we use the best estimate of the SSP for the distinct performance obligation as the lifetime warranty is neither separately priced nor is the selling price available through third-party evidence. To calculate the selling price associated with the lifetime warranties, management considers the profit margins of service revenue, the average estimated cost of lifetime warranties and the price of extended warranties. Revenue from the distinct lifetime warranty is deferred after the delivery of the equipment and recognized based on an estimated mortality rate over five years, which is the estimated performance period of the contract based on the average patient life expectancy.

Revenue from the sale of our repair services is recognized when the performance obligations are satisfied, and collection of the receivables is probable. Other revenue from the sale of replacement parts is generally recognized when product is shipped to customers.

Freight revenue consists of fees associated with the deployment of products internationally and domestically when expedited freight options are requested or when minimum order quantities are not met. Freight revenue is generally recognized upon shipment of the product but is deferred if control has not yet transferred to the customer. Shipping and handling costs for sold products and rental assets shipped to our customers are included on the consolidated statement of comprehensive income as part of cost of sales revenue and cost of rental revenue, respectively.

The payment terms and conditions of customer contracts vary by customer type and the products and services offered. For certain products or services and customer types, we require payment before the products or services are delivered to the customer. The timing of sales revenue recognition, billing and cash collection results in billed accounts receivable and deferred revenue in the consolidated balance sheet.

Contract liabilities primarily consist of deferred revenue related to lifetime warranties on direct-to-consumer sales revenue when cash payments are received in advance of services performed under the contract. The contract with the customer states the final terms of the sale, including the description, quantity, and price of each product or service purchase.

We elected to apply the practical expedient in accordance with ASC 606—*Revenue Recognition* and did not evaluate contracts of one year or less for the existence of a significant financing component. We do not expect any revenue to be recognized over a multi-year period with the exception of revenue related to lifetime warranties.

We recognize equipment rental revenue over the non-cancelable lease term, which is one month, less estimated adjustments, per ASC 842—*Leases*. We have separate contracts with each patient that are not subject to a master lease agreement with any payor. We evaluate the individual lease contracts at lease inception and the start of each monthly renewal period to determine if there is reasonable assurance that the bargain renewal option associated with the potential capped free rental period would be exercised. Historically, the exercise of such bargain renewal option is not reasonably assured at lease inception and most subsequent monthly lease renewal periods. If we determine that the reasonable assurance threshold for an individual patient is met at lease inception or at a monthly lease renewal period, such determination would impact the bargain renewal period for an individual lease. We would first consider the lease classification (sales-type lease or operating lease) and then appropriately recognize or defer rental revenue over the lease term, which may include a portion of the capped rental period. To date, we have not deferred any amounts associated with the capped rental period. Amounts related to the capped rental period have not been material in the periods presented.

The lease term begins on the date products are shipped to patients and are recorded at amounts estimated to be received under reimbursement arrangements with third-party payors, including Medicare, private payors, and Medicaid. Due to the nature of the industry and the reimbursement environment in which we operate, certain estimates are required to record net revenue and accounts receivable at their net realizable values. Inherent in these estimates is the risk that they will have to be revised or updated as additional information becomes available. Specifically, the complexity of many third-party billing arrangements and the uncertainty of reimbursement amounts for certain services from certain payors may result in adjustments to amounts originally recorded. Such adjustments are typically identified and recorded at the point of cash application, claim denial or account review. Accounts receivable are reduced by an allowance for doubtful accounts which provides for those accounts from which payment is not expected to be received, although product was delivered and revenue was earned. Upon determination that an account is uncollectable, it is written-off and charged to the allowance. Amounts billed but not earned due to the timing of the billing cycle are deferred and recognized in revenue on a straight-line basis over the monthly billing period. For example, if the first day of the billing period does not fall on the first of the month, then a portion of the monthly billing period will fall in the subsequent month and the related revenue and cost would be deferred based on the service days in the following month.

Rental revenue is recognized as earned, less estimated adjustments. Revenue not billed at the end of the period is reviewed for the likelihood of collections and accrued. The rental revenue stream is not guaranteed and payment will cease if the patient no longer needs oxygen or returns the equipment. Revenue recognized is at full estimated allowable reimbursement rates. Rental revenue is earned for that month if the patient is on service on the first day of the 30-day period commencing on the recurring date of service for a particular claim, regardless if there is a change in condition/death after that date. In the event that a third-party payor does not accept the claim for payment, the consumer is ultimately responsible for payment for the products and services. We have determined that the balances are collectable at the time of revenue recognition because the patient signs a notice of financial responsibility outlining their obligations.

Included in rental revenue are unbilled amounts that were earned but not able to be billed for various reasons. The criteria for recognizing revenue had been met as of period-end, but there were specific reasons why we were unable to bill Medicare and private insurance for these amounts. As a result, we create an unbilled rental revenue accrual based on these earned revenues not billed based on a percentage of unbilled amounts and historical trends and estimates of future collectability.

Acquisitions and related acquired intangible assets and goodwill

The purchase price of an acquisition is allocated to the underlying assets acquired and liabilities assumed based upon their estimated fair values at the date of acquisition. To the extent the purchase price exceeds the fair value of the net identifiable tangible and intangible assets acquired and liabilities assumed, such excess is allocated to goodwill. We may adjust the preliminary purchase price allocation, as necessary, for up to one year after the acquisition closing date if we obtain more information regarding asset valuations and liabilities assumed.

We acquired New Aera on August 9, 2019 for \$101.9 million. The excess purchase price over the fair value of net tangible assets and identifiable intangible assets acquired has been allocated to goodwill. Goodwill represents the expected synergies with the existing business, the acquired assembled workforce, and future cash flows after the acquisition. The fair value assigned to the identifiable intangible asset was determined primarily by using the excess earnings method. The key assumptions included in the excess earnings method included revenue recognized, cost of revenue and the discount rate.

Goodwill is tested for impairment on an annual basis as of October 1. Interim testing of goodwill for impairment is also required whenever an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit or asset below its carrying amount. No impairments were recorded as of December 31, 2019 and December 31, 2018.

Finite-lived intangible assets are amortized over their useful lives and are tested for recoverability whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Technology and customer relationship intangibles are amortized using the straight-line method.

Recent accounting pronouncements

Refer to Note 1 – Summary of significant accounting policies of the audited consolidated notes included in Part II, Item 8, "Financial Statements and Supplementary Data" in this Annual Report on Form 10-K for further discussion.

Off-balance sheet arrangements

We do not have any relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or for any other contractually narrow or limited purpose. However, from time-to-time, we enter into certain types of contracts that contingently require us to indemnify parties against third-party claims including certain real estate leases, supply purchase agreements, and directors and officers. The terms of such obligations vary by contract and in most instances a maximum dollar amount is not explicitly stated therein. Generally, amounts under these contracts cannot be reasonably estimated until a specific claim is asserted thus no liabilities have been recorded for these obligations on our balance sheets for any of the periods presented.

Inflation

We do not believe that inflation has had a material effect on our business, financial condition or results of operations. If our costs were to become subject to significant inflationary pressures, we might not be able to fully offset such higher costs through price increases. Our inability or failure to do so could harm our business, financial condition and results of operations.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to various market risks, including fluctuation in foreign currency exchange rates and interest rates. Market risk is the potential loss arising from adverse changes in market rates and prices. We do not hold or issue financial instruments for trading purposes.

Foreign currency exchange risk

The principal market risk we face is foreign currency exchange risk. The majority of our revenue is denominated in U.S. dollars while the majority of our European sales are denominated in Euros. In addition, we acquired MedSupport in the second quarter of 2017 with net assets denominated in Euros. Our results of operations, certain balance sheet balances and cash flows are, therefore, subject to fluctuations due to changes in foreign currency exchange rates. The volatility of exchange rates depends on many factors that we cannot forecast with reliable accuracy. We have experienced and will continue to experience fluctuations in our net income or loss as a result of transaction gains or losses related to revaluing certain current asset and current liability balances that are denominated in currencies other than the functional currency in which they are recorded. The effect of a 10% adverse change in exchange rates on foreign denominated cash, receivables and payables as of December 31, 2019 would not have had a material effect on our financial position, results of operations or cash flows. As our operations in countries outside of the United States grow, our results of operations and cash flows will be subject to fluctuations due to changes in foreign currency exchange rates, which could harm our business in the future.

We began entering into foreign exchange forward contracts in December 2015 to protect our forecasted U.S. dollar-equivalent earnings from adverse changes in foreign currency exchange rates. These hedging contracts reduce, but will not entirely eliminate, the impact of adverse currency exchange rate movements on revenue. We performed a sensitivity analysis assuming a hypothetical 10% adverse movement in foreign exchange rates to the hedging contracts and the underlying exposures described above. As of December 31, 2019, the analysis indicated that these hypothetical market movements would not have a material effect on our financial position, results of operations or cash flows. We estimate prior to any hedging activity that a 10% adverse change in exchange rates on our foreign denominated sales would have resulted in a \$5.5 million decline in revenue for the year ended December 31, 2019. We designate these forward contracts as cash flow hedges for accounting purposes. The fair value of the forward contract is separated into intrinsic and time values. The fair value of forward currency-exchange contracts is sensitive to changes in currency exchange rates. Changes in the time value are coded in other income (expense), net. Changes in the intrinsic value are recorded as a component of accumulated other comprehensive income and subsequently reclassified into revenue to offset the hedged exposures as they occur.

Interest rate fluctuation risk

We had cash and cash equivalents of \$198.0 million as of December 31, 2019, which consisted of highly-liquid investments with a maturity of three months or less, and \$11.1 million of marketable securities with maturity dates of greater than three months. The primary goals of our investment policy are liquidity and capital preservation. We do not enter into investments for trading or speculative purposes. We believe that we do not have any material exposure to changes in the fair value of these assets as a result of changes in interest rates due to the short-term nature of our cash and cash equivalents. Declines in interest rates, however, would reduce future investment income. We considered the historical volatility of short-term interest rates and determined that it was reasonably possible that an adverse change of 100 basis points could be experienced in the near term. A hypothetical 1.00% (100 basis points) increase in interest rates would not have materially impacted the fair value of our marketable securities as of December 31, 2019 and December 31, 2018. If overall interest rates had increased or decreased by 1.00% (100 basis points), neither our interest expense nor our interest income would have been materially affected during the years ended December 31, 2019 or December 31, 2018.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The financial statements and supplementary data required by this item are included in Part IV, Item 15 of this Report.

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

The Company maintains a system of disclosure controls and procedures as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), which are designed to provide reasonable assurance that information required to be disclosed in the reports that the Company files or submits under the Exchange Act, is recorded, processed, summarized and reported accurately and completely within the time periods specified in the SEC’s rules and forms. These disclosure controls and procedures include, among other processes, controls and procedures designed to ensure that information required to be disclosed in the reports that the Company files or submits under the Exchange Act is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. Due to inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Further, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions over time, or that the degree of compliance with the policies and procedures may deteriorate. Accordingly, even effective disclosure controls and procedures can only provide reasonable assurance of achieving their control objectives. Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2019. Based upon the evaluation described above, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2019, our disclosure controls and procedures were effective at the reasonable assurance level.

Management’s report on internal control over financial reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Our management, including our Chief Executive Officer and Chief Financial Officer, conducted an assessment of the effectiveness of our internal control over financial reporting based on the criteria set forth in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (COSO). Based on our evaluation under the COSO framework, our management concluded that our internal control over financial reporting was effective as of December 31, 2019 to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements in accordance with U.S. GAAP.

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

Report of independent registered public accounting firm

To the stockholders and the Board of Directors of Inogen, Inc.

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Inogen, Inc. and subsidiary (the “Company”) as of December 31, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended December 31, 2019 of the Company and our report dated February 25, 2020, expressed an unqualified opinion on those financial statements.

Basis for Opinion

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ *DELOITTE & TOUCHE LLP*

Los Angeles, California
February 25, 2020

Changes in internal controls over financial reporting

There has been no change in our internal control over financial reporting identified in connection with the evaluation required by paragraph (d) of Rule 13a-15 or 15d-15 that occurred during our most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Limitations on effectiveness of controls

In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving the desired control objectives. In addition, the design of disclosure controls and procedures must reflect the fact that there are resource constraints and that management is required to apply its judgment in evaluating the benefits of possible controls and procedures relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Because of the inherent limitations in any control system, misstatements due to error or fraud may occur and not be detected.

ITEM 9B. OTHER INFORMATION

Annual Meeting

Our annual meeting of stockholders will be held at 10:00 a.m. Pacific Time on Thursday, May 7, 2020, at our corporate headquarters located at 326 Bollay Drive, Goleta, California 93117. Holders of record at the close of business on Friday, March 13, 2020, will be entitled to vote at the meeting.

2014 Equity Incentive Plan and 2014 Employee Stock Purchase Plan “Evergreen” Determination

For 2020, our board of directors exercised its authority to not increase the shares available for issuance pursuant to the “evergreen” provisions under our 2014 Equity Incentive Plan and our 2014 Employee Stock Purchase Plan in 2019. Refer to Note 8 – Stockholders’ Equity of the Notes included in Part II, Item 8, “Financial Statements and Supplementary Data” in this Annual Report on Form 10-K for further discussion of the annual share increase provisions of our 2014 Equity Incentive Plan and our 2014 Employee Stock Purchase Plan.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information called for by this item will be set forth in our Proxy Statement for the Annual Meeting of Stockholders to be filed with the SEC within 120 days of the fiscal year ended December 31, 2019 (the “Proxy Statement”) and is incorporated herein by reference.

Our board of directors has adopted a Code of Ethics and Conduct that applies to all of our employees, officers and directors, including our Chief Executive Officer, Chief Financial Officer and other executive and senior financial officers. The full text of our Code of Ethics and Conduct is posted on the investor relations page on our website which is located at <http://investor.inogen.com>. We will post any amendments to our code of business conduct and ethics, or waivers of its requirements, on our website.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item will be disclosed in the Proxy Statement and is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDERS MATTERS

The information required by this item will be disclosed in the Proxy Statement and is incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be disclosed in the Proxy Statement and is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be disclosed in the Proxy Statement and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) *The following documents are filed as part of this Annual Report on Form 10-K:*

1. Financial Statements

The consolidated financial statements listed in the accompanying index (page F-1) to the consolidated financial statements are filed as part of this Annual Report on Form 10-K.

2. Financial Statement Schedules

See Schedule II – Valuation and Qualifying Accounts and Reserves included herein.

All other schedules have been omitted because the information either has been shown in the financial statements or notes thereto or is not applicable or required under this section.

(b) *Exhibits*

Exhibits are filed as part of this Annual Report on Form 10-K and are hereby incorporated by reference. Refer to Exhibit Index included herein.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

Inogen, Inc.
Index to Financial Statements
and Financial Statement Schedule

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Report of independent registered public accounting firm

To the stockholders and the Board of Directors of Inogen, Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Inogen, Inc. and subsidiary (the "Company") as of December 31, 2019 and 2018, the related consolidated statements of comprehensive income, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2019, and the related notes and the schedule listed in the Index at Item 15 (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in Internal Control — Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated February 25, 2020, expressed an unqualified opinion on the Company's internal control over financial reporting.

Basis for Opinion

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

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

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

Sales Revenue (Amounts Deferred for Lifetime Warranty) – Refer to Note 2 to the financial statements.

Critical Audit Matter Description

The Company offers a lifetime warranty for direct-to-consumer sales of its oxygen concentrators. For a fixed price, the Company agrees to provide a fully functional oxygen concentrator for the remaining life of the patient. Lifetime warranties are only offered to patients upon the initial sale of oxygen concentrators directly from the Company and are non-transferable. Lifetime warranties are considered to be a distinct performance obligation that are accounted for separately from its sale of oxygen concentrators with a standard warranty of three years.

The revenue is allocated to the distinct lifetime warranty performance obligation based on a relative stand-alone selling price ("SSP") method. The Company has vendor-specific objective evidence of the selling price for its equipment. To determine the selling price of the lifetime warranty, the Company uses its best estimate of the SSP for the distinct performance obligation as the lifetime warranty is neither separately priced nor is the selling price available through third-party evidence. To calculate the selling price associated with the lifetime warranties, management considers the profit margins of service revenue, the average estimated cost of lifetime warranties and the price of extended warranties. Revenue from the distinct lifetime warranty is deferred after the delivery of the equipment and recognized based on an estimated mortality rate over five years, which is the estimated performance period of the contract based on the average patient life expectancy. Total deferred revenue related to the lifetime warranty performance obligation totaled \$17.7 million at December 31, 2019.

Determining the estimated SSP requires significant judgment by management, which is informed by considering Company specific and external data. The service period used to amortize the deferred revenue also requires significant management judgment as the Company has limited historical experience and the determination of patient life expectancy is subjective in nature. Given the lack of stand-alone transactions together with the limited amount of historical data available for such offering, performing audit procedures to evaluate the estimated SSP and the service period for lifetime warranty required high degree of auditor judgment and an increased extent of effort.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to management's judgments regarding the stand-alone selling price and deferred revenue service period included the following, among others:

- We tested the effectiveness of controls over deferred revenue for the lifetime warranty, including controls over the underlying data utilized and the selection of the stand-alone selling price and the deferred revenue service period.
- We evaluated the methodology used by management to develop the stand-alone selling price and independently estimated the stand-alone selling price selected by management. In performing these procedures, we compared the stand-alone selling price selected by management to the independent estimate, which utilized external evidence of similar term extended warranties for oxygen concentrators and internal cost plus margin estimates.
- We evaluated the reasonableness of the deferred revenue service period by comparing to patient average life expectancy in medical and other industry publications. We further evaluated the realization of deferred revenue by evaluating the appropriateness of the underlying mortality data.

Acquisitions (Technology Intangible Asset) — Refer to Notes 2, 3 and 4 to the financial statements

Critical Audit Matter Description

On August 9, 2019, the Company completed the acquisition of New Aera, Inc. pursuant to and on the terms set forth in the Company's merger agreement. Under the agreement, all outstanding shares of capital stock of New Aera were cancelled and converted into the right to receive merger consideration with a value equal to up to \$101.9 million in cash and earnout payments. Assets and liabilities of the acquired company were recorded at their estimated fair values at the date of acquisition. The excess purchase price over the fair value of net tangible assets and identifiable intangible assets acquired has been allocated to goodwill. The fair value assigned to the identifiable intangible asset was determined primarily by using the excess earnings method. The key assumptions included in the excess earnings method included forecasted revenue, cost of revenue and the discount rate. Purchase price was allocated to the assets acquired and liabilities assumed based on their respective fair values, including an acquired technology intangible asset of \$77.7 million.

Given the significance of acquired technology relative to the overall acquisition, the estimation of fair value requires management to make significant estimates related to forecasted revenue, cost of revenue and the selection of the discount rate. Auditing procedures to evaluate the reasonableness of fair value method utilized as well as the reasonableness of assumptions require a high degree of auditor judgment and an increased extent of effort, including the need to involve our fair value specialists.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the valuation methodology utilized, forecasts of future revenues and cost of revenues and selection of the discount rate for the acquired technology intangible asset included the following, among others:

- We tested the effectiveness of controls over the valuation of the acquired technology intangible asset, including management's controls over the valuation methodology selected, forecasts of future revenues and cost of revenues, and the selection of the discount rate.
- We evaluated management's ability to accurately forecast future revenues and cost of revenue by comparing to management's historical experience and other publicly available industry data.
- With the assistance of our fair value specialists, we evaluated the reasonableness of the
 - valuation methodology; and
 - discount rate

With respect to the discount rate, we developed a range of independent estimates using market and industry data and compared those to the discount rates selected by management.

/s/ *DELOITTE & TOUCHE LLP*
Los Angeles, California
February 25, 2020

We have served as the Company's auditor since 2015.

Inogen, Inc.
Consolidated Balance Sheets
(amounts in thousands)

	December 31,	
	2019	2018
Assets		
Current assets		
Cash and cash equivalents	\$ 198,037	\$ 196,634
Marketable securities	11,057	43,715
Accounts receivable, net	34,325	37,041
Inventories, net	35,664	27,071
Income tax receivable	2,976	2,655
Prepaid expenses and other current assets	10,160	7,467
Total current assets	<u>292,219</u>	<u>314,583</u>
Property and equipment		
Rental equipment, net	39,308	43,038
Manufacturing equipment and tooling	9,704	7,338
Computer equipment and software	7,266	6,153
Furniture and equipment	1,730	1,445
Leasehold improvements	4,388	3,407
Land and building	125	125
Construction in process	1,773	3,128
Total property and equipment	64,294	64,634
Less accumulated depreciation	<u>(44,856)</u>	<u>(42,293)</u>
Property and equipment, net	<u>19,438</u>	<u>22,341</u>
Goodwill	32,954	2,257
Intangible assets, net	77,533	3,755
Operating lease right-of-use asset	5,855	—
Deferred tax asset - noncurrent	14,452	30,130
Other assets	4,888	2,832
Total assets	<u>\$ 447,339</u>	<u>\$ 375,898</u>

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Consolidated Balance Sheets (continued)
(amounts in thousands, except share and per share amounts)

	December 31,	
	2019	2018
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable and accrued expenses	\$ 30,730	\$ 26,786
Accrued payroll	6,215	11,407
Warranty reserve - current	4,923	3,549
Operating lease liability - current	2,014	—
Deferred revenue - current	5,478	4,451
Income tax payable	821	392
Total current liabilities	50,181	46,585
Long-term liabilities		
Warranty reserve - noncurrent	7,648	5,981
Operating lease liability - noncurrent	4,702	—
Earnout liability - noncurrent	26,559	—
Deferred revenue - noncurrent	13,541	11,844
Deferred tax liability - noncurrent	87	232
Other noncurrent liabilities	—	832
Total liabilities	102,718	65,474
Commitments and contingencies (Note 9)		
Stockholders' equity		
Common stock, \$0.001 par value per share; 200,000,000 shares authorized; 22,031,410 and 21,778,632 shares issued and outstanding as of December 31, 2019 and 2018, respectively	22	22
Additional paid-in capital	263,252	249,194
Retained earnings	81,434	60,484
Accumulated other comprehensive income (loss)	(87)	724
Total stockholders' equity	344,621	310,424
Total liabilities and stockholders' equity	\$ 447,339	\$ 375,898

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Consolidated Statements of Comprehensive Income
(amounts in thousands, except share and per share amounts)

	Years Ended December 31,		
	2019	2018	2017
Revenue			
Sales revenue	\$ 340,546	\$ 336,015	\$ 225,492
Rental revenue	21,397	22,096	23,946
Total revenue	361,943	358,111	249,438
Cost of revenue			
Cost of sales revenue	175,974	163,989	110,163
Cost of rental revenue, including depreciation of \$6,253, \$7,567 and \$9,835, respectively	14,108	15,542	18,038
Total cost of revenue	190,082	179,531	128,201
Gross profit			
Gross profit-sales revenue	164,572	172,026	115,329
Gross profit-rental revenue	7,289	6,554	5,908
Total gross profit	171,861	178,580	121,237
Operating expense			
Research and development	9,401	7,029	5,313
Sales and marketing	105,550	95,641	50,758
General and administrative	37,121	38,018	37,576
Total operating expense	152,072	140,688	93,647
Income from operations	19,789	37,892	27,590
Other income (expense)			
Interest income	4,712	3,259	765
Other income (expense)	(229)	(696)	1,301
Total other income, net	4,483	2,563	2,066
Income before provision (benefit) for income taxes	24,272	40,455	29,656
Provision (benefit) for income taxes	3,322	(11,390)	8,654
Net income	20,950	51,845	21,002
Other comprehensive income (loss), net of tax			
Change in foreign currency translation adjustment	(123)	31	363
Change in net unrealized gains (losses) on foreign currency hedging	(1,566)	981	(567)
Less: reclassification adjustment for net (gains) losses included in net income	872	(577)	446
Total net change in unrealized gains (losses) on foreign currency hedging	(694)	404	(121)
Change in net unrealized gains (losses) on marketable securities	6	17	65
Total other comprehensive income (loss), net of tax	(811)	452	307
Comprehensive income	\$ 20,139	\$ 52,297	\$ 21,309
Basic net income per share attributable to common stockholders (Note 2)	\$ 0.96	\$ 2.44	\$ 1.02
Diluted net income per share attributable to common stockholders (Note 2)	\$ 0.94	\$ 2.30	\$ 0.96
Weighted-average number of shares used in calculating net income per share attributable to common stockholders:			
Basic common shares	21,821,104	21,266,696	20,683,807
Diluted common shares	22,241,064	22,514,513	21,897,988

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Consolidated Statements of Stockholders' Equity
(amounts in thousands, except share amounts)

	Common stock		Additional paid-in capital	Retained earnings (accumulated deficit)	Accumulated other comprehensive income (loss)	Total stockholders' equity
	Shares	Amount				
Balance, December 31, 2016	20,389,860	\$ 20	\$ 194,466	\$ (12,363)	\$ (35)	\$ 182,088
Stock-based compensation	—	—	9,640	—	—	9,640
Employee stock purchases	24,523	—	1,379	—	—	1,379
Stock options exercised	561,967	1	12,624	—	—	12,625
Net income	—	—	—	21,002	—	21,002
Other comprehensive income	—	—	—	—	307	307
Balance, December 31, 2017	20,976,350	\$ 21	\$ 218,109	\$ 8,639	\$ 272	\$ 227,041
Stock-based compensation	—	—	12,790	—	—	12,790
Employee stock purchases	25,532	—	2,348	—	—	2,348
Restricted stock awards issued	56,609	—	—	—	—	—
Vesting of restricted stock units	18,112	—	—	—	—	—
Shares withheld related to net restricted stock settlement	(6,290)	—	(1,208)	—	—	(1,208)
Stock options exercised	708,319	1	17,155	—	—	17,156
Net income	—	—	—	51,845	—	51,845
Other comprehensive income	—	—	—	—	452	452
Balance, December 31, 2018	21,778,632	\$ 22	\$ 249,194	\$ 60,484	\$ 724	\$ 310,424
Stock-based compensation	—	—	9,129	—	—	9,129
Employee stock purchases	47,816	—	2,748	—	—	2,748
Restricted stock awards issued, net of forfeitures	82,677	—	—	—	—	—
Vesting of restricted stock units	28,115	—	(82)	—	—	(82)
Shares withheld related to net restricted stock settlement	(15,121)	—	(846)	—	—	(846)
Stock options exercised	109,291	—	3,109	—	—	3,109
Net income	—	—	—	20,950	—	20,950
Other comprehensive loss	—	—	—	—	(811)	(811)
Balance, December 31, 2019	22,031,410	\$ 22	\$ 263,252	\$ 81,434	\$ (87)	\$ 344,621

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Consolidated Statements of Cash Flows
(amounts in thousands)

	Years Ended December 31,		
	2019	2018	2017
Cash flows from operating activities			
Net income	\$ 20,950	\$ 51,845	\$ 21,002
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Depreciation and amortization	13,834	11,295	12,302
Loss on rental assets and other fixed assets	568	1,160	1,136
Gain on sale of former rental assets	(68)	(416)	(64)
Provision for sales revenue returns and doubtful accounts	17,177	17,518	13,773
Provision for rental revenue adjustments	2,233	2,678	5,057
Provision for inventory losses	972	351	340
Stock-based compensation expense	9,129	12,790	9,640
Deferred income taxes	2,873	(11,595)	7,947
Change in fair value of earnout liability	810	—	—
Changes in operating assets and liabilities:			
Accounts receivable	(16,707)	(25,963)	(18,263)
Inventories	(10,336)	(9,972)	(5,894)
Income tax receivable	(321)	(1,348)	(875)
Prepaid expenses and other current assets	(2,693)	(4,524)	(782)
Operating lease right-of-use asset	(5,856)	—	—
Other noncurrent assets	(2,064)	(1,626)	—
Accounts payable and accrued expenses	3,202	6,360	7,438
Accrued payroll	(5,188)	4,538	722
Warranty reserve	3,041	3,359	2,689
Deferred revenue	2,724	3,360	3,654
Income tax payable	429	64	225
Operating lease liability	6,716	—	—
Other noncurrent liabilities	(832)	103	447
Net cash provided by operating activities	<u>40,593</u>	<u>59,977</u>	<u>60,494</u>
Cash flows from investing activities			
Purchases of marketable securities	(58,686)	(76,162)	(46,933)
Maturities of marketable securities	91,350	63,455	37,041
Investment in intangible assets	(254)	(350)	(3,316)
Investment in property and equipment	(3,143)	(8,043)	(2,914)
Production and purchase of rental equipment	(3,117)	(4,580)	(3,997)
Proceeds from sale of former assets	194	715	183
Payment for acquisition, net of cash acquired	<u>(70,401)</u>	<u>—</u>	<u>(4,494)</u>
Net cash used in investing activities	<u>(44,057)</u>	<u>(24,965)</u>	<u>(24,430)</u>

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Consolidated Statements of Cash Flows (continued)
(amounts in thousands)

	Years Ended December 31,		
	2019	2018	2017
Cash flows from financing activities			
Proceeds from stock options exercised	3,109	17,156	12,625
Proceeds from employee stock purchases	2,748	2,348	1,379
Payment of employment taxes related to release of restricted stock	(928)	(1,208)	—
Net cash provided by financing activities	4,929	18,296	14,004
Effect of exchange rates on cash	(62)	373	34
Net increase in cash and cash equivalents	1,403	53,681	50,102
Cash and cash equivalents, beginning of period	196,634	142,953	92,851
Cash and cash equivalents, end of period	<u>\$ 198,037</u>	<u>\$ 196,634</u>	<u>\$ 142,953</u>
Supplemental disclosures of cash flow information			
Cash paid during the period for income taxes, net of refunds received	\$ 239	\$ 1,653	\$ 1,267
Supplemental disclosure of non-cash transactions			
Accrued value of earnout related to acquisition	25,749	—	—
Property and equipment in account payable and accrued liabilities	66	125	70

See accompanying notes to the consolidated financial statements.

Inogen, Inc.
Notes to the Consolidated Financial Statements
(amounts in thousands, except share and per share amounts)

1. Nature of business

Inogen, Inc. (Company or Inogen) was incorporated in Delaware on November 27, 2001. The Company is a medical technology company that primarily develops, manufactures and markets innovative portable oxygen concentrators used to deliver supplemental long-term oxygen therapy to patients suffering from chronic respiratory conditions. Traditionally, these patients have relied on stationary oxygen concentrator systems for use in the home and oxygen tanks or cylinders for mobile use, which the Company calls the delivery model. The tanks and cylinders must be delivered regularly and have a finite amount of oxygen, which requires patients to plan activities outside of their homes around delivery schedules and a finite oxygen supply. Additionally, patients must attach long, cumbersome tubing to their stationary concentrators simply to enable mobility within their homes. The Company's proprietary Inogen One® systems concentrate the air around the patient to offer a single source of supplemental oxygen anytime, anywhere with a single battery and can be plugged into an outlet when at home, in a car, or in a public place with outlets available. The Company's Inogen One systems reduce the patient's reliance on stationary concentrators and scheduled deliveries of tanks with a finite supply of oxygen, thereby improving patient quality of life and fostering mobility.

Since adopting the Company's direct-to-consumer rental strategy in 2009, the Company has directly sold or rented more than 774,000 of its Inogen oxygen concentrators as of December 31, 2019.

The Company incorporated Inogen Europe Holding B.V., a Dutch limited liability company, on April 13, 2017. On May 4, 2017, Inogen Europe Holding B.V. acquired all issued and outstanding capital stock of MedSupport Systems B.V. (MedSupport) and began operating under the name Inogen Europe B.V. The Company merged Inogen Europe Holding B.V. and Inogen Europe B.V. on December 28, 2018. Inogen Europe B.V. is the remaining legal entity. Inogen completed the acquisition of New Aera, Inc. (New Aera) on August 9, 2019.

2. Summary of significant accounting policies

Basis of presentation

The consolidated financial statements of the Company have been prepared in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP).

Basis of consolidation

The consolidated financial statements include the accounts of Inogen, Inc. and its wholly owned subsidiary. All intercompany balances and transactions have been eliminated.

Accounting estimates

The preparation of consolidated financial statements in conformity with 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 at the date of the consolidated financial statements and the reported amounts of revenues and expenses during the reporting period. Management bases these estimates and assumptions upon historical experience, existing and known circumstances, authoritative accounting pronouncements and other factors that management believes to be reasonable. Significant areas requiring the use of management estimates relate to revenue recognition and determining the stand-alone selling price (SSP) of performance obligations, inventory and rental asset valuations and write-downs, accounts receivable allowances for bad debts, returns and adjustments, warranty expense, stock compensation expense, depreciation and amortization, income tax provision and uncertain tax positions, fair value of financial instruments, fair value of acquired intangible assets and goodwill and fair value of earnout liabilities. Actual results could differ from these estimates.

Revenue

The Company generates revenue primarily from sales and rentals of its products. The Company's products consist of its proprietary line of oxygen concentrators, non-invasive ventilators, and related accessories. Other revenue, which is included in sales revenue on the Statements of Comprehensive Income, primarily comes from service contracts, replacement parts and freight revenue for product shipments.

Sales revenue

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. Revenue from product sales is generally recognized upon shipment of the product but is deferred for certain transactions when control has not yet transferred to the customer.

The Company's product is generally sold with a right of return and the Company may provide other incentives, which are accounted for as variable consideration when estimating the amount of revenue to recognize. Returns and incentives are estimated at the time sales revenue is recognized. The provision for estimated returns is calculated based on historical data and future expectations. Sales revenue incentives within the Company's contracts are estimated based on the most likely amounts expected on the related sales transactions and recorded as a reduction to revenue at the time of sale in accordance with the terms of the contract. Accordingly, revenue is recognized net of allowances for estimated returns and incentives.

The Company also offers a lifetime warranty for direct-to-consumer sales of its oxygen concentrators. For a fixed price, the Company agrees to provide a fully functional oxygen concentrator for the remaining life of the patient. Lifetime warranties are only offered to patients upon the initial sale of oxygen concentrators directly from the Company and are non-transferable. Lifetime warranties are considered to be a distinct performance obligation that are accounted for separately from its sale of oxygen concentrators with a standard warranty of three years.

The revenue is allocated to the distinct lifetime warranty performance obligation based on a relative SSP method. The Company has vendor-specific objective evidence of the selling price for its equipment. To determine the selling price of the lifetime warranty, the Company uses its best estimate of the SSP for the distinct performance obligation as the lifetime warranty is neither separately priced nor is the selling price available through third-party evidence. To calculate the selling price associated with the lifetime warranties, management considers the profit margins of service revenue, the average estimated cost of lifetime warranties and the price of extended warranties. Revenue from the distinct lifetime warranty is deferred after the delivery of the equipment and recognized based on an estimated mortality rate over five years, which is the estimated performance period of the contract based on the average patient life expectancy.

Revenue from the sale of the Company's repair services is recognized when the performance obligations are satisfied and collection of the receivables is probable. Other revenue from the sale of replacement parts is generally recognized when product is shipped to customers.

Freight revenue consists of fees associated with the deployment of products internationally and domestically when expedited freight options are requested or when minimum order quantities are not met. Freight revenue is generally recognized upon shipment of the product but is deferred if control has not yet transferred to the customer. Shipping and handling costs for sold products and rental assets shipped to the Company's customers are included on the consolidated statements of comprehensive income as part of cost of sales revenue and cost of rental revenue, respectively.

The payment terms and conditions of customer contracts vary by customer type and the products and services offered. For certain products or services and customer types, the Company requires payment before the products or services are delivered to the customer. The timing of sales revenue recognition, billing and cash collection results in billed accounts receivable and deferred revenue in the consolidated balance sheet.

Contract liabilities primarily consist of deferred revenue related to lifetime warranties on direct-to-consumer sales revenue when cash payments are received in advance of services performed under the contract. The contract with the customer states the final terms of the sale, including the description, quantity, and price of each product or service purchase. The increase in deferred revenue related to lifetime warranties for the years ended December 31, 2019 and December 31, 2018 was primarily driven by \$757 and \$6,909, respectively, of payments received in advance of satisfying performance obligations, partially offset by \$5,903 and \$2,855 of revenues recognized that were included in the deferred revenue balances as of December 31, 2018 and December 31, 2017, respectively. Deferred revenue related to lifetime warranties was \$17,728 and \$14,874 as of December 31, 2019 and December 31, 2018, respectively, and is classified within deferred revenue – current and noncurrent deferred revenue in the consolidated balance sheet.

The Company elected to apply the practical expedient in accordance with Accounting Standards Codification (ASC) 606—*Revenue Recognition* and did not evaluate contracts of one year or less for the existence of a significant financing component. The Company does not expect any revenue to be recognized over a multi-year period with the exception of revenue related to lifetime warranties.

The Company's sales revenue is primarily derived from the sale of its oxygen concentrator products to individual consumers, home medical equipment providers, distributors, the Company's private label partner and resellers worldwide. Sales revenue is classified into two areas: business-to-business sales and direct-to-consumer sales. The following table sets forth the Company's sales revenue disaggregated by sales channel and geographic region:

(amounts in thousands)

Revenue by region and category	Years ended December 31,		
	2019	2018	2017
Business-to-business domestic sales	\$ 106,428	\$ 116,581	\$ 83,390
Business-to-business international sales	77,960	77,333	55,519
Direct-to-consumer domestic sales	156,158	142,101	86,583
Total sales revenue	<u>\$ 340,546</u>	<u>\$ 336,015</u>	<u>\$ 225,492</u>

Rental revenue

The Company recognizes equipment rental revenue over the non-cancelable lease term, which is one month, less estimated adjustments, in accordance with ASC 842—Leases. The Company has separate contracts with each patient that are not subject to a master lease agreement with any third-party payor. The Company evaluates the individual lease contracts at lease inception and the start of each monthly renewal period to determine if it is reasonably certain that the monthly renewal option and the bargain renewal option associated with the potential capped free rental period would be exercised. Historically, the exercise of the monthly renewal and bargain renewal option is not reasonably certain at lease inception and at most subsequent monthly lease renewal periods. If the Company determines that the reasonably certain threshold for an individual patient is met at lease inception or at a monthly lease renewal period, such determination would impact the bargain renewal period for an individual lease. The Company would first consider the lease classification issue (sales-type lease or operating lease) and then appropriately recognize or defer rental revenue over the lease term, which may include a portion of the capped rental period. The Company deferred \$0 associated with the capped rental period as of December 31, 2019 and December 31, 2018.

The lease term begins on the date products are shipped to patients and are recorded at amounts estimated to be received under reimbursement arrangements with third-party payors, including Medicare, private payors, and Medicaid. Due to the nature of the industry and the reimbursement environment in which the Company operates, certain estimates are required to record net revenue and accounts receivable at their net realizable values. Inherent in these estimates is the risk that they will have to be revised or updated as additional information becomes available. Specifically, the complexity of many third-party billing arrangements and the uncertainty of reimbursement amounts for certain services from certain payors may result in adjustments to amounts originally recorded. Such adjustments are typically identified and recorded at the point of cash application, claim denial or account review. The Company adjusts revenue for historical trends on revenue adjustments due to timely filings, deaths, hospice, and other types of analyzable adjustments on a monthly basis to record rental revenue at the expected collectible amounts. Accounts receivable are reduced by an allowance for doubtful accounts which provides for those accounts from which payment is not expected to be received although product was delivered and revenue was earned. The determination that an account is uncollectable, and the ultimate write-off of that account occurs once collection is considered to be highly unlikely, and it is written-off and charged to the allowance at that time. Amounts billed but not earned due to the timing of the billing cycle are deferred and recognized in revenue on a straight-line basis over the monthly billing period. For example, if the first day of the billing period does not fall on the first of the month, then a portion of the monthly billing period will fall in the subsequent month and the related revenue and cost would be deferred based on the service days in the following month.

The lease agreements generally contain lease and non-lease components. Non-lease components primarily include payments for supplies. The Company elected the practical expedient to treat the lease and non-lease components as a single lease component.

Rental revenue is recognized as earned, less estimated adjustments. Revenue not billed at the end of the period is reviewed for the likelihood of collections and accrued. The rental revenue stream is not guaranteed, and payment will cease if the patient no longer needs oxygen or returns the equipment. Revenue recognized is at full estimated allowable amounts; transfers to secondary insurances or patient responsibility have no net effect on revenue. Rental revenue is earned for that entire month if the patient is on service on the first day of the 30-day period commencing on the recurring date of service for a particular claim, regardless if there is a change in condition or death after that date.

Included in rental revenue are unbilled amounts for which the revenue recognition criteria had been met as of period-end but were not yet billed to the payor. The estimate of net unbilled rental revenue recognized is based on historical trends and estimates of future collectability. In addition, the Company estimates potential future adjustments and write-offs of these unbilled amounts and includes these estimates in the allowance for adjustments and write-offs of rental revenue which is netted against gross receivables.

Fair value accounting

ASC 820 — *Fair Value Measurements and Disclosures* creates a single definition of fair value, establishes a framework for measuring fair value in U.S. GAAP and expands disclosures about fair value measurements. ASC 820 emphasizes that fair value is a market-based measurement, not an entity-specific measurement, and states that a fair value measurement is to estimate the price at which an orderly transaction to sell an asset or to transfer the liability would take place between market participants at the measurement date under current market conditions. Assets and liabilities adjusted to fair value in the balance sheet are categorized based upon the level of judgment associated with the inputs used to measure their fair value. Level inputs, as defined by ASC 820, are as follows:

Level	Input definition
-------	------------------

- | | |
|---------|--|
| Level 1 | Inputs are unadjusted, quoted prices for identical assets or liabilities in active markets at the measurement date. |
| Level 2 | Inputs, other than quoted prices included in Level 1, that are observable for the asset or liability through corroboration with market data at the measurement date. |
| Level 3 | Unobservable inputs that reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. |

The Company's financial instruments consist of cash and cash equivalents, marketable securities, accounts receivable, accounts payable and accrued expenses. The carrying values of its financial instruments approximate fair value based on their short-term nature.

Fair value of financial instruments

The Company obtained the fair value of its available-for-sale investments, which are not in active markets, from a third-party professional pricing service using quoted market prices for identical or comparable instruments, rather than direct observations of quoted prices in active markets. The Company's professional pricing service gathers observable inputs for all of its fixed income securities from a variety of industry data providers (e.g., large custodial institutions) and other third-party sources. Once the observable inputs are gathered, all data points are considered, and the fair value is determined. The Company validates the quoted market prices provided by its primary pricing service by comparing their assessment of the fair values against the fair values provided by its investment managers. The Company's investment managers use similar techniques to its professional pricing service to derive pricing as described above. As all significant inputs were observable, derived from observable information in the marketplace or supported by observable levels at which transactions are executed in the marketplace, the Company has classified its marketable securities within Level 2 of the fair value hierarchy.

The following table summarizes fair value measurements by level for the assets measured at fair value on a recurring basis for cash, cash equivalents and marketable securities:

As of December 31, 2019					
(amounts in thousands)	Adjusted cost	Gross unrealized gains	Fair value	Cash and cash equivalents	Marketable securities
Cash	\$ 51,560	\$ —	\$ 51,560	\$ 51,560	\$ —
Level 1:					
Money market accounts	146,477	—	146,477	146,477	—
Level 2:					
Corporate bonds	2,011	2	2,013	—	2,013
U.S. Treasury securities	9,038	6	9,044	—	9,044
Total	<u>\$ 209,086</u>	<u>\$ 8</u>	<u>\$ 209,094</u>	<u>\$ 198,037</u>	<u>\$ 11,057</u>
As of December 31, 2018					
(amounts in thousands)	Adjusted cost	Gross unrealized gains (losses)	Fair value	Cash and cash equivalents	Marketable securities
Cash	\$ 33,671	\$ —	\$ 33,671	\$ 33,671	\$ —
Level 1:					
Money market accounts	158,438	—	158,438	158,438	—
Level 2:					
Corporate bonds	13,629	(16)	13,613	—	13,613
U.S. Treasury securities	34,620	7	34,627	4,525	30,102
Total	<u>\$ 240,358</u>	<u>\$ (9)</u>	<u>\$ 240,349</u>	<u>\$ 196,634</u>	<u>\$ 43,715</u>

The following table summarizes the estimated fair value of the Company's investments in marketable securities, classified by the contractual maturity date of the securities:

(amounts in thousands)	December 31, 2019
Due within one year	\$ 11,057
Due in one year through five years	—
Total	<u>\$ 11,057</u>

Fair value of derivative instruments and hedging activities

The Company transacts business in foreign currencies and has international sales and expenses denominated in foreign currencies, subjecting the Company to foreign currency risk. The Company has entered into foreign currency forward contracts, generally with maturities of twelve months or less, to reduce the volatility of cash flows primarily related to forecasted revenue denominated in certain foreign currencies. These contracts allow the Company to sell Euros in exchange for U.S. dollars at specified contract rates. Forward contracts are used to hedge forecasted sales over specific months. Changes in the fair value of these forward contracts designed as cash flow hedges are recorded as a component of accumulated other comprehensive income within stockholders' equity and are recognized in the consolidated statements of comprehensive income during the period which approximates the time the corresponding sales occur. The Company may also enter into foreign exchange contracts that are not designated as hedging instruments for financial accounting purposes. These contracts are generally entered into to offset the gains and losses on certain asset and liability balances until the expected time of repayment. Accordingly, any gains or losses resulting from changes in the fair value of the non-designated contracts are reported in other expense, net in the consolidated statements of comprehensive income. The gains and losses on these contracts generally offset the gains and losses associated with the underlying foreign currency-denominated balances, which are also reported in other income (expense), net.

The Company records the assets or liabilities associated with derivative instruments and hedging activities at fair value based on Level 2 inputs in other current assets or other current liabilities, respectively, in the consolidated balance sheet. The Company had a related payable of \$514 and a related receivable of \$472 as of December 31, 2019 and 2018, respectively. The Company classifies the foreign currency derivative instruments within Level 2 in the fair value hierarchy as the valuation inputs are based on quoted prices and market observable data of whether it is designated and qualifies for hedge accounting.

The Company documents the hedging relationship and its risk management objective and strategy for undertaking the hedge, the hedging instrument, the hedged transaction, the nature of the risk being hedged, how the hedging instrument's effectiveness in offsetting the hedged risk will be assessed prospectively and retrospectively, and a description of the method used to measure ineffectiveness. The Company assesses hedge effectiveness and ineffectiveness at a minimum quarterly but may assess it monthly. For derivative instruments that are designed and qualify as part of a cash flow hedging relationship, the effective portion of the gain or loss on the derivative is reported in other comprehensive income (loss) and reclassified into earnings in the same periods during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current period earnings.

The Company will discontinue hedge accounting prospectively when it determines that the derivative is no longer effective in offsetting cash flows attributable to the hedge risk. The cash flow hedge is de-designated because a forecasted transaction is not probable of occurring, or management determines to remove the designation of the cash flow hedge. In all situations in which hedge accounting is discontinued and the derivative remains outstanding, the Company continues to carry the derivative at its fair value on the balance sheet and recognizes any subsequent changes in the fair value in earnings. When it is probable that a forecasted transaction will not occur, the Company will discontinue hedge accounting and recognize immediately in earnings gains and losses that were accumulated in other comprehensive income related to the hedging relationship.

Fair value of accumulated other comprehensive income (loss)

The components of accumulated other comprehensive income (loss) were as follows:

As of December 31, 2019				
	Foreign currency translation adjustments	Unrealized gains on marketable securities	Unrealized gains (losses) on cash flow hedges	Accumulated other comprehensive income (loss)
<i>(amounts in thousands)</i>				
Balance as of December 31, 2018	\$ 394	\$ —	\$ 330	\$ 724
Other comprehensive income (loss)	(123)	6	(694)	(811)
Balance as of December 31, 2019	<u>\$ 271</u>	<u>\$ 6</u>	<u>\$ (364)</u>	<u>\$ (87)</u>

As of December 31, 2018				
	Foreign currency translation adjustments	Unrealized gains (losses) on marketable securities	Unrealized gains (losses) on cash flow hedges	Accumulated other comprehensive income
<i>(amounts in thousands)</i>				
Balance as of December 31, 2017	\$ 363	\$ (17)	\$ (74)	\$ 272
Other comprehensive income	31	17	404	452
Balance as of December 31, 2018	<u>\$ 394</u>	<u>\$ —</u>	<u>\$ 330</u>	<u>\$ 724</u>

Comprehensive income (loss) is the total net earnings and all other non-owner changes in equity. Except for net income and unrealized gains and losses on cash flow hedges, the Company does not have any transactions or other economic events that qualify as comprehensive income (loss).

Fair value of earnout liability

The earnout liability will be adjusted to fair value at each reporting date until settled. At the end of each reporting period after the acquisition date, the arrangement is remeasured at its fair value, with changes in fair value recorded in earnings. Changes in fair value will be recognized in general and administrative expense.

The Company has obligations to pay up to \$31,400 in earnout payments in cash if certain future financial results are met. The earnout liability was valued using Level 3 inputs. The fair value of the earnout was determined by employing a Monte Carlo simulation in a risk-neutral framework. The underlying simulated variable includes recognized revenue. The recognized revenue volatility estimate was based on a study of historical asset volatility for a set of comparable public companies. The model includes other assumptions including the market price of risk, which was calculated as the weighted average cost of capital (WACC) less the long-term risk free rate. The earnout period for recognized revenue is each calendar year beginning with calendar year 2019 and ending on the calendar year in which the earnout consideration equals the earnout cap.

The following table provides quantitative information about Level 3 inputs for fair value measurement of the earnout liability as of the acquisition date and December 31, 2019. Significant increases or decreases in these inputs in isolation could result in a significant impact on our fair value measurement:

Simulation input	At acquisition August 9, 2019	As of December 31, 2019
Revenue volatility	35.00 %	35.00 %
WACC	12.50 %	13.00 %
20-year risk free rate	2.03 %	2.25 %
Market price of risk	9.00 %	10.00 %

The reconciliation of the earnout liability measured and carried at fair value on a recurring basis is as follows:

<i>(amounts in thousands)</i>	Twelve months ended December 31, 2019
Balance at beginning of period	\$ —
Addition for acquisition	25,749
Change in fair value	810
Balance at end of period	<u>\$ 26,559</u>

Cash, cash equivalents, and marketable securities

The Company considers all short-term highly liquid investments with a maturity of three months or less to be cash equivalents. The Company's marketable debt securities are classified and accounted for as available-for-sale. Cash equivalents are recorded at cost plus accrued interest, which is considered adjusted cost, and approximates fair value. Marketable debt securities are included in cash equivalents and marketable securities based on the maturity date of the security. Short-term investments are included in marketable securities in the current period presentation.

The Company considers investments with maturities greater than three months, but less than one year, to be marketable securities. Investments are reported at fair value with realized and unrealized gains or losses reported in other income (expense), net.

The Company reviews its investments to identify and evaluate investments that have an indication of possible impairment. Factors considered in determining whether a loss is temporary include the length of time and extent to which fair value has been less than the cost basis, the financial condition and near-term prospects of the investee, and the Company's intent and ability to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value. Credit losses and other-than-temporary impairments are declines in fair value that are not expected to recover and are charged to other income (expense), net. Cash, cash equivalents, and marketable securities consist of the following:

<i>(amounts in thousands)</i>	December 31,	
Cash and cash equivalents	2019	2018
Cash	\$ 51,560	\$ 33,671
Money market accounts	146,477	158,438
U.S. Treasury securities	—	4,525
Total cash and cash equivalents	<u>\$ 198,037</u>	<u>\$ 196,634</u>
Marketable securities		
Corporate bonds	2,013	13,613
U. S. Treasury securities	9,044	30,102
Total marketable securities	<u>\$ 11,057</u>	<u>\$ 43,715</u>

Accounts receivable and allowance for bad debts, returns, and adjustments

Accounts receivable are customer obligations due under normal sales and rental terms. The Company performs credit evaluations of the customers' financial condition and generally does not require collateral. The allowance for doubtful accounts is maintained at a level that, in management's opinion, is adequate to absorb potential losses related to accounts receivable and is based upon the Company's continuous evaluation of the collectability of outstanding balances. Management's evaluation takes into consideration such factors as past bad debt experience, economic conditions and information about specific receivables. The Company's evaluation also considers the age and composition of the outstanding amounts in determining their net realizable value.

The allowance for doubtful accounts is based on estimates, and ultimate losses may vary from current estimates. As adjustments to these estimates become necessary, they are reported in general and administrative expense for sales revenue and as a reduction of rental revenue in the periods in which they become known. The allowance is increased by bad debt provisions, net of recoveries, and is reduced by direct write-offs.

The Company generally does not allow returns from providers for reasons not covered under its standard warranty. Therefore, provision for returns applies primarily to direct-to-consumer sales. This reserve is calculated primarily based on actual historical return rates under the Company's 30-day return program and is applied to the related sales revenue for the last month of the quarter reported.

The Company also records an allowance for rental revenue adjustments which is recorded as a reduction of rental revenue and net rental accounts receivable balances. These adjustments result from contractual adjustments, audit adjustments, untimely claims filings, or billings not paid due to another provider performing same or similar functions for the patient in the same period, all of which prevent billed revenue from becoming realizable. The reserve is based on historical revenue adjustments as a percentage of rental revenue billed and unbilled during the related period.

When recording the allowance for doubtful accounts for sales revenue, the bad debt expense account (general and administrative expense account) is charged; when recording allowance for sales returns, the sales returns account (contra sales revenue account) is charged; and when recording the allowances for rental reserve adjustments and doubtful accounts, the rental revenue adjustments account (contra rental revenue account) is charged. Prior to the adoption of ASC 842, the Company separately recorded an allowance for doubtful accounts by charging bad debt expense, which is now recorded as part of rental revenue adjustments during the year ended December 31, 2019.

As of December 31, 2019 and December 31, 2018, included in accounts receivable on the consolidated balance sheets were earned but unbilled receivables of \$90 and \$589, respectively. These balances reflect gross unbilled receivables prior to any allowances for adjustments and write-offs. The Company consistently applies its allowance estimation methodology from period-to-period. The Company's best estimate is made on an accrual basis and adjusted in future periods as required. Any adjustments to the prior period estimates are included in the current period. As additional information becomes known, the Company adjusts its assumptions accordingly to change its estimate of the allowance. For the years ended December 31, 2019 and December 31, 2018, the Company had increases of \$611 and \$1,757, respectively, in the provision for bad debt and revenue adjustments related to prior years.

Gross accounts receivable balance concentrations by major category as of December 31, 2019 and December 31, 2018 were as follows:

<i>(amounts in thousands)</i>	As of		As of	
	December 31, 2019		December 31, 2018	
Gross accounts receivable	\$	%	\$	%
Rental (1)	\$ 3,003	8.3 %	\$ 3,406	8.7 %
Business-to-business and other receivables (2)	33,101	91.7 %	35,656	91.3 %
Total gross accounts receivable	<u>\$ 36,104</u>	<u>100.0 %</u>	<u>\$ 39,062</u>	<u>100.0 %</u>

Net accounts receivable (gross accounts receivable, net of allowances) balance concentrations by major category as of December 31, 2019 and December 31, 2018 were as follows:

(amounts in thousands)	As of		As of	
	December 31, 2019		December 31, 2018	
Net accounts receivable	\$	%	\$	%
Rental (1)	\$ 2,464	7.2 %	\$ 2,413	6.5 %
Business-to-business and other receivables (2)	31,861	92.8 %	34,628	93.5 %
Total net accounts receivable	\$ 34,325	100.0 %	\$ 37,041	100.0 %

(1) Rental includes Medicare, Medicaid/other government, private insurance and patient pay.

(2) Business-to business receivables included one customer with a gross accounts receivable balance of \$10,695 and \$16,198 as of December 31, 2019 and December 31, 2018, respectively. This customer received extended payment terms through a direct financing plan offered. The Company also has a credit insurance policy in place, which allocated up to \$20,000 in coverage as of December 31, 2019 and allocated up to \$18,000 in coverage as of December 31, 2018 for this customer with a \$400 deductible and 10% retention.

The following table sets forth the percentage breakdown of the Company's net accounts receivable (gross accounts receivable net of allowances) by aging category by invoice due date as of December 31, 2019 and December 31, 2018.

(amounts in thousands)	As of		As of	
	December 31, 2019		December 31, 2018	
Net accounts receivable by aging category	\$	%	\$	%
Held and Unbilled	\$ 294	0.8 %	\$ 80	0.2 %
Aged 0-90 days	33,427	97.4 %	36,245	97.9 %
Aged 91-180 days	343	1.0 %	425	1.1 %
Aged 181-365 days	261	0.8 %	234	0.6 %
Aged over 365 days	—	0.0 %	57	0.2 %
Total net accounts receivable	\$ 34,325	100.0 %	\$ 37,041	100.0 %

The following table sets forth the accounts receivable allowances as of December 31, 2019 and December 31, 2018:

(amounts in thousands)	As of		As of	
	December 31, 2019		December 31, 2018	
Allowances - accounts receivable	\$	%	\$	%
Doubtful accounts (1)	\$ 205	0.6 %	\$ 693	1.8 %
Rental revenue adjustments (1)	411	1.1 %	438	1.1 %
Sales returns	1,163	3.2 %	890	2.3 %
Total allowances - accounts receivable	\$ 1,779	4.9 %	\$ 2,021	5.2 %

(1) Prior to the adoption of ASC 842, the Company separately recorded an allowance for doubtful accounts by charging bad debt expense. Upon adoption of ASC 842, such balances are recorded as part of rental revenue adjustments to report rental revenue at an expected collectible amount.

Concentration of credit risk

Financial instruments that potentially subject the Company to concentration of credit risk consist principally of cash, cash equivalents, marketable securities and accounts receivable. At times, cash account balances may be in excess of the amounts insured by the Federal Deposit Insurance Corporation (FDIC). However, management believes the risk of loss to be minimal. The Company performs periodic evaluations of the relative credit standing of these institutions and has not experienced any losses on its cash and cash equivalents to date. The Company has also entered into hedging relationships with a single counterparty to offset the forecasted Euro-based revenues. The credit risk has been reduced due to a net settlement arrangement whereby the Company is allowed to net settle transactions with a single net amount payable by one party to the other.

Concentration of customers and vendors

The Company primarily sells its products to traditional home medical equipment providers, distributors, and resellers in the United States and in foreign countries on a credit basis. The Company also sells its products direct-to-consumers on a primarily prepayment basis. No single customer represented more than 10% of the Company's total revenue for the year ended December 31, 2019. One single customer represented more than 10% of the Company's total revenue for the years ended December 31, 2018 and 2017. Two customers each represented more than 10% of the Company's net accounts receivable balance with accounts receivable balances of \$10,695 and \$5,228, respectively, as of December 31, 2019, and \$16,198 and \$4,155, respectively, as of December 31, 2018.

The Company currently purchases raw materials from a limited number of vendors, which resulted in a concentration of three major vendors. The three major vendors supply the Company with raw materials used to manufacture the Company's products. For the year ended December 31, 2019, the Company's three major vendors accounted for 23.2%, 13.9% and 9.4%, respectively, of total raw material purchases. For the year ended December 31, 2018, the Company's three major vendors accounted for 20.0%, 11.9% and 10.2%, respectively, of total raw material purchases.

A portion of revenue is earned from sales outside the United States. Approximately 70.2% and 74.8% of the non-U.S. revenue for the years ended December 31, 2019 and 2018, respectively, were invoiced in Euros. A breakdown of the Company's revenue from U.S. and non-U.S. sources for the years ended December 31, 2019, 2018 and 2017, respectively, is as follows:

(amounts in thousands)	Years ended December 31,		
	2019	2018	2017
U.S. revenue	\$ 283,983	\$ 280,778	\$ 193,919
Non-U.S. revenue	77,960	77,333	55,519
Total revenue	<u>\$ 361,943</u>	<u>\$ 358,111</u>	<u>\$ 249,438</u>

Inventories

Inventories are stated at the lower of cost and net realizable value. Cost is determined using a standard cost method, including material, labor and manufacturing overhead, whereby the standard costs are updated at least quarterly to reflect approximate actual costs using the first-in, first-out (FIFO) method. The Company records adjustments at least quarterly to inventory for potentially excess, obsolete, slow-moving or impaired items. The Company recorded noncurrent inventory related to inventories that are expected to be realized or consumed after one year of \$1,076 and \$1,085 as of December 31, 2019 and 2018, respectively. Noncurrent inventories are primarily related to raw materials purchased in bulk to support long-term expected repairs to reduce costs and are classified in other assets. During the years ended December 31, 2019, 2018 and 2017, \$1,043, \$1,187 and \$1,055, respectively, of inventory was transferred to rental equipment and was considered a noncash transaction in the production and purchase of rental equipment on the consolidated statements of cash flows. Inventories that are considered current consist of the following:

(amounts in thousands)	December 31,	
	2019	2018
Raw materials and work-in-progress	\$ 31,676	\$ 24,980
Finished goods	5,174	2,756
Less: reserves	(1,186)	(665)
Inventories, net	<u>\$ 35,664</u>	<u>\$ 27,071</u>

Property and equipment

Property and equipment are stated at cost. Depreciation and amortization are calculated using the straight-line method over the assets' estimated useful lives as follows:

Rental equipment	1.5-5 years
Manufacturing equipment and tooling	3-5 years
Computer equipment and software	2-3 years
Furniture and equipment	3-5 years
Leasehold improvements	Lesser of estimated useful life or remaining lease term

Expenditures for additions, improvements and replacements are capitalized and depreciated to a salvage value of \$0. Repair and maintenance costs on rental equipment are included in cost of rental revenue on the consolidated statements of comprehensive income. Repair and maintenance expense, which includes labor, parts and freight, for rental equipment was \$2,854, \$2,289 and \$2,385 for the years ended December 31, 2019, 2018 and 2017, respectively.

Included within property and equipment is construction in process, primarily related to the design and engineering of tooling, jigs and other machinery. In addition, this item also includes computer software or development costs that have been purchased but have not completed the final configuration process for implementation into the Company's systems. These items have not been placed in service; therefore, no depreciation or amortization was recognized for these items in the respective periods.

Depreciation and amortization expense related to rental equipment and other property and equipment are summarized below for the years ended December 31, 2019, 2018 and 2017, respectively.

(amounts in thousands)	Years ended December 31,		
	2019	2018	2017
Rental equipment	\$ 6,253	\$ 7,567	\$ 9,835
Other property and equipment	3,421	2,463	1,960
Total depreciation and amortization	<u>\$ 9,674</u>	<u>\$ 10,030</u>	<u>\$ 11,795</u>

Property and equipment and rental equipment with associated accumulated depreciation is summarized below as of December 31, 2019 and 2018, respectively.

(amounts in thousands)	December 31,	
	2019	2018
Property and equipment		
Rental equipment, net of allowances of \$395 and \$594, respectively	\$ 39,308	\$ 43,038
Other property and equipment	24,986	21,596
Property and equipment	<u>64,294</u>	<u>64,634</u>
Accumulated depreciation		
Rental equipment	30,984	31,813
Other property and equipment	13,872	10,480
Accumulated depreciation	<u>44,856</u>	<u>42,293</u>
Property and equipment, net		
Rental equipment, net of allowances of \$395 and \$594, respectively	8,324	11,225
Other property and equipment	11,114	11,116
Property and equipment, net	<u>\$ 19,438</u>	<u>\$ 22,341</u>

Long-lived assets

The Company accounts for the impairment and disposition of long-lived assets in accordance with ASC 360—*Property, Plant, and Equipment*. In accordance with ASC 360, long-lived assets to be held are reviewed for events or changes in circumstances that indicate that their carrying value may not be recoverable. The Company periodically reviews the carrying value of long-lived assets to determine whether or not impairment to such value has occurred. No impairments were recorded as of December 31, 2019 and 2018.

Goodwill and intangible assets

Goodwill is tested for impairment on an annual basis as of October 1. Interim testing of goodwill for impairment is also required whenever an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit or asset below its carrying amount. No impairments were recorded as of December 31, 2019 and 2018.

Finite-lived intangible assets are amortized over their useful lives and are tested for recoverability whenever events or changes in circumstances indicate that the carrying amount may not be recoverable. Technology, customer relationships and non-compete agreements are amortized using the straight-line method.

Business combinations

The results of operations of the businesses acquired by the Company are included as of the acquisition date. The purchase price of an acquisition is allocated to the underlying assets acquired and liabilities assumed based upon their estimated fair values at the date of acquisition. To the extent the purchase price exceeds the fair value of the net identifiable tangible and intangible assets acquired and liabilities assumed, such excess is allocated to goodwill. The Company may adjust the preliminary purchase price allocation, as necessary, for up to one year after the acquisition closing date if it obtains more information regarding asset valuations and liabilities assumed. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred.

Leases

The Company determines if an arrangement is a lease at inception. Operating leases are included in operating lease right-of-use (ROU) assets, operating lease liability – current, and operating lease liability – noncurrent on the consolidated balance sheets.

ROU assets represent the Company's right to use an underlying asset for the lease term and lease liabilities represent the Company's obligation to make lease payments arising from the lease. Operating lease ROU assets and liabilities are recognized at commencement date based on the present value of lease payments over the lease term. The Company uses an incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments as the rate implicit in each lease is generally not readily determinable. The operating lease ROU asset also includes any lease payments made to the lessor at or before the commencement date and excludes lease incentives. Lease terms may include options to extend or terminate the lease when it is reasonably certain that the Company will exercise that option. Lease expense for lease payments is recognized on a straight-line basis over the lease term.

The Company has lease agreements with lease and non-lease components. The Company elected the practical expedient to treat the lease and non-lease components as a single lease component. Additionally, the Company elected the practical expedient to not record leases with an initial term of twelve months or less on the consolidated balance sheets.

Loss contingencies

The Company is involved in various lawsuits, claims, investigations, and proceedings that arise in the ordinary course of business. The Company records a liability when it believes that it is both probable that a loss has been incurred and the amount can be reasonably estimated. Significant judgment is required to determine both probability and the estimated amount. The Company reviews at least quarterly and adjusts accordingly to reflect the impact of negotiations, settlements, rulings, advice of legal counsel, and updated information. At this time, the Company has no accrual related to lawsuits, claims, investigations and proceedings.

Research and development

Research and development costs are expensed as incurred.

Advertising costs

Advertising costs, which approximated \$40,251, \$30,755 and \$12,511 during the years ended December 31, 2019, 2018 and 2017, respectively, are expensed as incurred, excluding the production costs of direct response advertising. Advertising costs are included in sales and marketing expense in the accompanying consolidated statements of comprehensive income.

Income taxes

The Company accounts for income taxes in accordance with ASC 740—*Income Taxes*. Under ASC 740, income taxes are recognized for the amount of taxes payable or refundable for the current period and deferred tax liabilities and assets are recognized for the future tax consequences of transactions that have been recognized in the Company's consolidated financial statements or tax returns. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply 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. A valuation allowance is provided when it is more likely than not that some portion, or all, of the deferred tax asset will not be realized.

The Company accounts for uncertainties in income tax in accordance with ASC 740-10—*Accounting for Uncertainty in Income Taxes*. ASC 740-10 prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. This accounting standard also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

The Company recognizes interest and penalties on taxes, if any, within its income tax provision on its consolidated statements of comprehensive income.

Accounting for stock-based compensation

The Company accounts for its stock-based compensation in accordance with ASC 718— *Compensation—Stock Compensation*, which establishes accounting for share-based awards, exchanged for employee services and requires companies to expense the estimated fair value of these awards over the requisite employee service period. Stock-based compensation cost for stock options and employee stock purchase plan are determined at the grant date using the Black-Scholes option pricing model. Stock-based compensation cost for stock incentive awards is based on the number of shares ultimately expected to vest, estimated at each reporting date based on management's expectations regarding the relevant performance criteria. The value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the employee's requisite service period.

As part of the provisions of ASC 718, the Company is required to estimate potential forfeitures of stock grants and adjust compensation cost recorded accordingly. The estimate of forfeitures will be adjusted over the requisite service period to the extent that actual forfeitures differ, or are expected to differ, from such estimates. Changes in estimated forfeitures will be recognized through a cumulative catch-up adjustment in the period of change and will also impact the amount of stock compensation expense to be recognized in future periods.

Foreign currency

The functional currency of the Company's international subsidiary is the local currency. The financial statements of the subsidiary are translated to U.S. dollars using month-end exchange rates for assets and liabilities and average exchange rates for revenue, cost of revenue, operating expense and provision for income taxes. Translation gains and losses are recorded in accumulated other comprehensive income (loss) as a component of stockholders' equity. Foreign exchange transaction gains and losses resulting from the conversion of the transaction currency to functional currency are reflected as a component of foreign currency exchange gains or losses in other income (expense) in the consolidated statements of comprehensive income.

Earnings per share

Earnings per share (EPS) is computed in accordance with ASC 260— *Earnings per Share* and is calculated using the weighted-average number of common shares outstanding during each period. Diluted EPS assumes the conversion, exercise or issuance of all potential common stock equivalents (which can include dilution of outstanding stock options, restricted stock units and restricted stock awards) unless the effect is to reduce a loss or increase the income per share. For purposes of this calculation, common stock subject to repurchase by the Company, options, and other dilutive awards are considered to be common stock equivalents and are only included in the calculation of diluted earnings per share when their effect is dilutive.

Basic earnings per share is calculated using the Company's weighted-average outstanding common shares. Diluted earnings per share is calculated using the Company's weighted-average outstanding common shares including the dilutive effect of stock awards as determined under the treasury stock method.

The computation of EPS is as follows:

(amounts in thousands, except share and per share amounts)	Years ended December 31,		
	2019	2018	2017
Numerator—basic and diluted:			
Net income	\$ 20,950	\$ 51,845	\$ 21,002
Denominator:			
Weighted-average common shares - basic common stock ⁽¹⁾	21,821,104	21,266,696	20,683,807
Weighted-average common shares - diluted common stock	22,241,064	22,514,513	21,897,988
Net income per share - basic common stock	\$ 0.96	\$ 2.44	\$ 1.02
Net income per share - diluted common stock	\$ 0.94	\$ 2.30	\$ 0.96
Denominator calculation from basic to diluted:			
Weighted-average common shares - basic common stock ⁽¹⁾	21,821,104	21,266,696	20,683,807
Stock options and other dilutive awards	419,960	1,247,817	1,214,181
Weighted-average common shares - diluted common stock	22,241,064	22,514,513	21,897,988
Shares excluded from diluted weighted-average shares:			
Stock options	53,888	—	37,249
Restricted stock units and restricted stock awards	169,305	39,330	26,064
Shares excluded from diluted weighted-average shares	223,193	39,330	63,313

- (1) Unvested restricted stock units and restricted stock awards are not included as shares outstanding in the calculation of basic earnings per share. Vested restricted stock units and restricted stock awards are included in basic earnings per share if all vesting and performance criteria have been met. Performance-based restricted stock units and restricted stock awards are included in the number of shares used to calculate diluted earnings per share as long as all applicable performance criteria are met, and their effect is dilutive. Restricted stock awards are eligible to receive all dividends declared on the Company's common shares during the vesting period; however, such dividends are not paid until the restrictions lapse.

The computations of diluted net income attributable to common stockholders excluded common stock options, restricted stock units, and restricted stock awards, which were anti-dilutive for the years ended December 31, 2019, 2018 and 2017.

Business segments

The Company operates and reports in only one operating and reportable segment – development, manufacturing, marketing, sales, and rental of respiratory products. Management reports financial information on a consolidated basis to the Company's chief operating decision maker.

Recently issued accounting pronouncements not yet adopted

In June 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-13, *Accounting for Credit Losses (Topic 326)*. The new standard requires the use of an "expected loss" model on certain types of financial instruments. The standard also amends the impairment model for available-for-sale debt securities and requires estimated credit losses to be recorded as allowances instead of reductions to amortized cost of the securities. The ASU is effective for fiscal years beginning after December 15, 2019, and interim periods within those years, with early adoption permitted. The Company is currently evaluating the new guidance but does not expect it to have a material impact on the Company's consolidated financial statement presentation or results.

In January 2017, the FASB issued ASU No. 2017-04, *Simplifying the Test for Goodwill Impairment*. The new guidance eliminates step two of the goodwill impairment test. Under the new guidance, an entity should recognize an impairment charge for the amount by which a reporting unit's carrying value exceeds its fair value. The ASU is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. The Company is currently evaluating the effect of the new guidance but does not expect it to have a material impact on the Company's consolidated financial statement presentation or results.

In August 2018, the FASB issued ASU No. 2018-13, *Fair Value Measurement (Topic 820): Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement*. The new guidance modifies the disclosure requirements on fair value measurements. The ASU is effective for fiscal years beginning after December 15, 2019, with early adoption permitted. While the Company continues to evaluate the effect of adopting this guidance, the Company expects the fair value disclosures related to financial instruments, derivative instruments and hedging activities and earnout liabilities will be subject to the new standard.

In December 2019, the FASB issued ASU No. 2019-12, *Income Taxes (Topic 740): Simplifying the Accounting for Income Taxes*. The new guidance simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The new guidance also improves consistent application of and simplifies US GAAP for other areas of Topic 740 by clarifying and amending the existing guidance. The ASU is effective for fiscal years beginning after December 15, 2020, with early adoption permitted. The Company is currently evaluating the effect of the new guidance.

Recently adopted accounting pronouncements

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*. The new guidance requires organizations that lease assets—referred to as “lessees”—to recognize on the consolidated balance sheet the assets and liabilities for the rights and obligations created by those leases with lease terms of more than twelve months. The Company adopted the standard using the modified retrospective transition method at the adoption date of January 1, 2019 that does not require restatement of its comparative periods presented, allows it to apply the standard as of the adoption date and record a cumulative adjustment in retained earnings. As permitted under the transition guidance, the Company carried forward the assessment of whether the Company’s contracts contain or are leases, classification of the Company’s leases and remaining lease terms. The Company elected the practical expedients to not record leases with an initial term of twelve months or less on the consolidated balance sheet and to not separate lease and non-lease components for all of its leases as the non-lease components are not significant to the overall lease costs. The Company recognized approximately \$6,400 of operating lease right-of-use assets and operating lease liabilities on the consolidated balance sheets upon adoption on January 1, 2019. The Company also recognizes equipment rental revenue over the non-cancelable lease term, which is one month, less estimated adjustments, in accordance with Topic 842, effective January 1, 2019. The impact on rental revenue as a result of the adoption did not have a material impact on the Company’s consolidated financial presentation or results. There were no cumulative adjustments recorded to retained earnings as a result of the adoption. As a result of adoption of Topic 842, the bad debt expense account associated with the rental revenue allowance for doubtful account is charged to rental revenue instead of general and administrative expense upon adoption. This change results in decreased rental revenue and decreased operating expense.

In August 2017, the FASB issued ASU No. 2017-12, *Derivatives and Hedging*, which changes both the designation and measurement guidance for qualifying hedging relationships and the presentation of hedge results, in order to better align an entity’s risk management activities and financial reporting for hedging relationships. The amendments expand and refine hedge accounting for both nonfinancial and financial risk components and align the recognition and presentation of the effects of the hedging instrument and the hedged item in the financial statements. The Company adopted this standard on January 1, 2019 and adoption of this standard did not have a material impact on the Company’s consolidated financial statement presentation or results.

In January 2018, the FASB issued ASU No. 2018-02, *Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*. The new guidance permits entities the option to reclassify tax effects that are stranded in accumulated other comprehensive income as a result of the implementation of the Tax Cuts and Jobs Act to retained earnings. The Company adopted this standard on January 1, 2019 using the beginning of the period of adoption method and adoption of this standard did not have a material impact on the Company’s consolidated financial statement presentation or results.

In June 2018, the FASB issued ASU No. 2018-07, *Compensation - Stock Compensation (Topic 718): Improvements to Nonemployee Share-Based Payment Accounting*. The new guidance modifies the accounting for nonemployee share-based payments. The Company adopted this standard on January 1, 2019 and adoption of this standard did not have a material impact on the Company’s consolidated financial statement presentation or results.

Prior period reclassifications

Certain amounts in prior periods have been reclassified to conform with current period presentation.

3. Acquisitions

On August 6, 2019, the Company entered into an Agreement and Plan of Merger (Merger Agreement) by and among the Company, New Aera, Inc., a Delaware corporation, Move Merger Sub, Inc., a Delaware corporation and a wholly-owned subsidiary of the Company, and Gregory J. Kapust, as stockholder representative. On August 9, 2019, the Company completed the acquisition of New Aera pursuant to and on the terms set forth in the Merger Agreement. In connection with the Merger Agreement, the Company also separately acquired certain intellectual property assets from Silverbow Development, LLC, an affiliate of New Aera (Silverbow). New Aera is an innovative developer and manufacturer of portable non-invasive ventilators for people suffering from various chronic lung diseases. Under the terms of the Merger Agreement, all outstanding shares of capital stock of New Aera were cancelled and converted into the right to receive merger consideration with a value equal to up to \$101,923 in cash in the aggregate (inclusive of payments to Silverbow) comprised of \$70,523 of cash paid at closing and up to \$31,400 in earnout payments if certain performance targets are achieved. Acquisition-related expenses of approximately \$784 were incurred in the twelve months ended December 31, 2019 and classified within general and administrative expense. Goodwill associated with this acquisition is not expected to be deductible for income tax purposes.

Assets and liabilities of the acquired company were recorded at their estimated fair values at the date of acquisition. The excess purchase price over the fair value of net tangible assets and identifiable intangible assets acquired has been allocated to goodwill. Goodwill represents the expected synergies with the existing business, the acquired assembled workforce, and future cash flows after the acquisition. The fair value assigned to the identifiable intangible asset was determined primarily by using the excess earnings method. The key assumptions included in the excess earnings method included revenue recognized, cost of revenue and the discount rate. The fair value of the earnout liability was measured using a Monte Carlo simulation and was discounted using a rate that appropriately captures the risk associated with the obligation. The key assumption included in the simulation included revenue recognized.

Preliminary fair values of assets acquired and liabilities assumed have been updated for deferred taxes. The purchase accounting for this acquisition has been finalized.

The following table summarizes the purchase price allocation for the acquisition of New Aera:

(amounts in thousands)

Cash	\$	122
Inventories		140
Other current assets		8
Property and equipment		224
Goodwill		30,742
Intangible assets		77,700
Total assets acquired	\$	<u>108,936</u>
Deferred tax liability - noncurrent	\$	12,664
Earnout liability - noncurrent		25,749
Total liabilities assumed		<u>38,413</u>
Total purchase price	\$	<u>70,523</u>

The consolidated financial and operating results reflect the New Aera operations beginning August 9, 2019. The following unaudited pro forma information for the twelve months ended December 31, 2019 and the twelve months ended December 31, 2018 presents the revenue and net income assuming the acquisition of New Aera had occurred as of January 1, 2018.

<i>(amounts in thousands)</i>	Twelve months ended December 31,	
	2019	2018
Total revenue	\$ 361,953	\$ 358,134
Net income	\$ 13,256	\$ 41,498

4. Goodwill and other identifiable intangible assets

Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2019 and 2018 were as follows:

(amounts in thousands)

Balance as of December 31, 2017	\$	2,363
Translation adjustment		(106)
Balance as of December 31, 2018	\$	2,257
Translation adjustment		(45)
Acquisition		30,742
Balance as of December 31, 2019	\$	32,954

Intangible assets

There were no impairments recorded related to the Company's intangible assets as of December 31, 2019 and 2018. Amortization expense for intangible assets for the years ended December 31, 2019, 2018 and 2017 was \$4,160, \$1,265 and \$507, respectively.

The following tables represent the changes in net carrying values of the intangibles as of the respective dates:

(amounts in thousands)	Average estimated useful lives (in years)	Gross carrying amount	Accumulated amortization	Net amount
December 31, 2019				
Technology	10	\$ 77,700	\$ 2,914	\$ 74,786
Licenses	10	185	165	20
Patents and websites	5	4,274	2,308	1,966
Customer relationships	4	1,346	897	449
Commercials	2-3	777	465	312
Total		\$ 84,282	\$ 6,749	\$ 77,533

(amounts in thousands)	Average estimated useful lives (in years)	Gross carrying amount	Accumulated amortization	Net amount
December 31, 2018				
Licenses	10	\$ 185	\$ 155	\$ 30
Patents and websites	5	4,164	1,640	2,524
Customer relationships	4	1,373	572	801
Non-compete agreement	2.3	229	154	75
Commercials	2-3	633	308	325
Total		\$ 6,584	\$ 2,829	\$ 3,755

Annual estimated amortization expense for each of the succeeding fiscal years is as follows:

(amounts in thousands)	December 31, 2019
2020	\$ 8,970
2021	8,680
2022	8,367
2023	7,792
2024	7,788
Thereafter	35,936
Total	\$ 77,533

5. Current liabilities

Accounts payable and accrued expenses as of December 31, 2019 and 2018 consisted of the following:

	December 31,	
	2019	2018
<i>(amounts in thousands)</i>		
Accounts payable	\$ 16,399	\$ 13,720
Accrued inventory (in-transit and unvouchered receipts) and trade payables	11,124	9,597
Accrued purchasing card liability	1,675	2,089
Accrued franchise, sales and use taxes	713	518
Other accrued expenses	819	862
Accounts payable and accrued expenses	<u>\$ 30,730</u>	<u>\$ 26,786</u>

Accrued payroll as of December 31, 2019 and 2018 consisted of the following:

	December 31,	
	2019	2018
<i>(amounts in thousands)</i>		
Accrued bonuses	\$ 87	\$ 4,780
Accrued wages and other payroll related items	3,158	3,494
Accrued vacation	2,169	1,959
Accrued employee stock purchase plan deductions	801	1,174
Accrued payroll	<u>\$ 6,215</u>	<u>\$ 11,407</u>

6. Leases

The Company has entered into operating leases primarily for commercial buildings. These leases have terms which range from 2 years to 8 years, some of which include options to extend the leases for up to 5 years. There are no economic penalties for the Company to extend the lease, and it is not reasonably assured that the Company will exercise the extension options. Based on the present value of the lease payments for the remaining lease term of the Company's existing leases, the Company recognized operating lease right-of-use assets and operating lease liabilities of \$6,418 on January 1, 2019. Operating lease right-of-use assets and liabilities commencing after January 1, 2019 are recognized at commencement date based on the present value of lease payments over the lease term. The operating leases do not contain material residual value guarantees or material restrictive covenants.

As a result of the MedSupport acquisition, the Company leases a property owned by a related party. Operating lease cost for the property was \$1 and \$33 for the years ended December 31, 2019 and 2018, respectively, which was included in the total operating lease cost.

Information related to the Company's right-of-use assets and related operating lease liabilities were as follows:

	Twelve months ended December 31, 2019	
<i>(amounts in thousands)</i>		
Cash paid for operating lease liabilities	\$	2,486
Operating lease cost		2,269
Non-cash right-of-use assets obtained in exchange for new operating lease obligations		7,855
Weighted-average remaining lease term		2.6 years
Weighted-average discount rate		3.8 %

Maturities of lease liabilities due in the 12-month period ending December 31,		
2020	\$	2,228
2021		1,604
2022		1,284
2023		1,217
2024		917
Thereafter		—
		<u>7,250</u>
Less imputed interest		(534)
Total lease liabilities	\$	<u>6,716</u>
Operating lease liability - current	\$	2,014
Operating lease liability - noncurrent		4,702
Total lease liabilities	\$	<u>6,716</u>

As of December 31, 2019, the Company has additional operating leases for its corporate headquarters in California and commercial and industrial space in Texas that have not yet commenced, with total minimum lease payments of \$27,215. Lease payments for its corporate headquarters will increase annually by the lesser of the change, if any, in the Consumer Price Index of the Bureau of Labor Statistics of the U.S. Department of Labor or three and one-half percent (3.5%) at each annual adjustment date thereafter. Lease payments for the Company's commercial and industrial space in Texas will increase annually by two and one-half percent (2.5%) at each annual adjustment date thereafter. These operating leases will commence in 2020 with a lease term of 10-11 years. This table does not include lease payments that were not fixed at commencement or modification.

Supplemental information for comparative periods

As of December 31, 2018, prior to the adoption of Topic 842, future minimum payments under operating leases having initial or remaining non-cancelable lease terms in excess of one year were as follows:

<i>(amounts in thousands)</i>	Operating leases (1)	
2019	\$	2,450
2020		2,212
2021		1,593
2022		1,273
2023		1,215
Thereafter		917
Total minimum payments	\$	<u>9,660</u>

(1) Includes future minimum payments for leases which have not yet commenced.

7. Income taxes

The components of the Company's income before provision for income taxes are as follows:

<i>(amounts in thousands)</i>	Years ended December 31,		
	2019	2018	2017
United States	\$ 22,553	\$ 40,245	\$ 29,121
Foreign	1,719	210	535
Income before provision for income taxes	<u>\$ 24,272</u>	<u>\$ 40,455</u>	<u>\$ 29,656</u>

The provision for income taxes consists of the following:

(amounts in thousands)	Years ended December 31,		
	2019	2018	2017
Current tax expense (benefit)			
Federal	\$ (330)	\$ —	\$ 245
State	136	(40)	240
Foreign	560	171	206
Total current tax expense	366	131	691
Deferred tax expense (benefit)			
Federal	3,497	(9,774)	8,709
State	(396)	(1,630)	92
Foreign	(145)	(117)	(71)
Total deferred tax expense (benefit)	2,956	(11,521)	8,730
Tax benefit for change in valuation allowance	—	—	(767)
Total deferred tax expense (benefit), net	2,956	(11,521)	7,963
Income tax expense (benefit)	<u>\$ 3,322</u>	<u>\$ (11,390)</u>	<u>\$ 8,654</u>

The components of deferred tax assets and liabilities consist of the following:

(amounts in thousands)	As of December 31,	
	2019	2018
Deferred tax assets (liabilities)		
Accrued expenses	\$ 7,981	\$ 8,033
Net operating loss and credit carryforward	20,087	19,805
Allowance, reserves and other	1,984	3,490
Stock-based compensation	3,257	3,253
Lease liability	1,627	—
Deferred tax assets	34,936	34,581
Property, plant, and equipment	(2,961)	(4,683)
Intangible amortization	(16,192)	—
Right-of-use asset	(1,418)	—
Deferred tax liabilities	(20,571)	(4,683)
Total	<u>\$ 14,365</u>	<u>\$ 29,898</u>

Reconciliation of the federal statutory income tax rate to the effective income tax rate for the years ended December 31, 2019, 2018 and 2017 is as follows:

	Years ended December 31,		
	2019	2018	2017
U.S. Statutory rate	21.00%	21.00%	34.00%
State income taxes, net of federal benefit	3.70	(3.73)	0.37
Stock-based compensation	(0.81)	(45.01)	(30.40)
Change in valuation allowance	—	—	(2.59)
R&D credit, net of reserve	(8.97)	(1.39)	(1.43)
Expiration of net operating losses	—	—	2.76
Effect of U.S tax law change	—	—	25.55
Other	(1.24)	0.98	0.92
Effective income tax rate	<u>13.68%</u>	<u>(28.15)%</u>	<u>29.18%</u>

On December 22, 2017, TCJA was enacted into law, which significantly changes existing U.S. tax law and includes numerous provisions that affect the Company's business. Changes include, but are not limited to, a corporate tax rate decrease from 34% to 21% effective for tax years beginning after December 31, 2017, expensing of capital expenditures, the transition of U.S. international taxation from a worldwide tax system to a territorial system, a one-time transition tax on the mandatory deemed repatriation of cumulative foreign earnings, and limitations on the deductibility of certain executive compensation and other deductions. The

Company is required to recognize the effect of the tax law changes in the period of enactment, including the transition tax, re-measuring the Company's U.S. deferred tax assets and liabilities, as well as reassessing the net realizability of the Company's deferred tax assets and liabilities. During the fourth quarter of 2017, the Company recorded a provisional net charge of \$7,578 related to the TCJA due to the remeasurement of its deferred tax assets. There was no impact related to the one-time transition tax on the mandatory deemed repatriation of foreign earnings. As of December 31, 2018, the Company completed its evaluation and analysis of the TCJA and there was no additional adjustment to the provisional amount recorded in the fourth quarter of 2017.

The Company operates in several taxing jurisdictions, including U.S. federal, multiple U.S. states and the Netherlands. The statute of limitations has expired for all tax years prior to 2015 for federal and prior to 2014 for various state tax purposes. However, the net operating loss generated on the Company's federal and state tax returns in prior years may be subject to adjustments by the federal and state tax authorities.

As of December 31, 2019, the Company had \$54,883 and \$25,679 of federal and state net operating loss carryforwards, respectively, and \$46,426 of the total federal net operating loss carryforwards have an indefinite life while the remaining federal and state net operating loss carryforwards begin to expire in 2033 and 2028, respectively, if not utilized. As of December 31, 2019, the Company had federal and California research and development credit carryforward of \$4,511 and \$4,006, respectively. The federal credit will begin to expire in 2022; the California credit has indefinite carryforward.

Utilization of the Company's net operating loss and tax credit carryforwards may be subject to annual limitations arising from ownership change limitations provided by the Internal Revenue Code and similar state provisions. Such annual limitations could result in the expiration of the net operating loss and tax credit carryforwards before their utilization.

The Company assesses the available positive and negative evidence to estimate whether sufficient future taxable income will be generated to permit the use of deferred tax assets. As of December 31, 2019, the Company determined that it is more likely than not that deferred tax assets are realizable due to significant positive evidence of cumulative earnings. Accordingly, the Company did not record a valuation allowance as of December 31, 2019.

The Company recognizes interest and penalties on taxes, within its income tax provision on its consolidated statements of comprehensive income. No significant interest or penalties were recognized during the periods presented.

Included in the balance of unrecognized tax benefits as of December 31, 2019, 2018 and 2017, were \$1,889, \$1,294 and \$1,062, respectively, of tax benefits that, if recognized, would affect the effective tax rate. The Company believes that there will be no significant increases or decreases to unrecognized tax benefits within the next 12 months.

A reconciliation of the beginning and ending amount of unrecognized tax benefit is as follows:

(amounts in thousands)

	December 31,		
Reconciliation of liability for unrecognized tax benefits	2019	2018	2017
Balance at beginning of period	\$ 1,294	\$ 1,062	\$ 934
Additions based on tax positions related to current year	595	232	128
Balance at end of period	<u>\$ 1,889</u>	<u>\$ 1,294</u>	<u>\$ 1,062</u>

8. Stockholders' equity

Common stock

Each share of common stock is entitled to one vote. The holders of common stock are also entitled to receive dividends whenever funds are legally available and when declared by the board of directors, subject to the prior rights of holders of other classes of stock outstanding.

Preferred stock

Pursuant to the amended and restated certificate of incorporation filed by the Company in connection with the completion of its initial public offering, the Company's board of directors is authorized to issue up to 10,000,000 shares of preferred stock in one or more series and to fix the rights, preferences, privileges and restrictions thereof. These rights, preferences and privileges could include dividend rights, conversion rights, voting rights, redemption rights, liquidation preferences, sinking fund terms and the number of shares constituting any series or the designation of such series, any or all of which may be greater than the rights of common stock. The issuance of preferred stock could adversely affect the voting power of holders of common stock and the likelihood that such holders will receive dividend payments and payments upon liquidation. In addition, the issuance of preferred stock could have the effect of delaying, deferring or preventing change in the Company's control or other corporate action. As of December 31, 2019 and 2018, no shares of preferred stock were issued or outstanding, and the board of directors has not authorized or designated any rights, preferences, privileges and restrictions for any class of preferred stock.

Dividends

There were no dividends declared during the years ended December 31, 2019, 2018 and 2017.

Stock incentive plans

The Company has a 2002 Stock Incentive Plan (2002 Plan) as amended, under which the Company granted options to purchase shares of its common stock. As of December 31, 2019, options to purchase 333 shares of common stock remained outstanding under the 2002 Plan. The 2002 Plan was terminated in March 2012 in connection with the adoption of the 2012 Plan, and, accordingly, no new options are available for issuance under this plan. The 2002 Plan continues to govern outstanding awards granted thereunder.

The Company has a 2012 Equity Incentive Plan (2012 Plan) under which the Company granted options to purchase shares of its common stock. As of December 31, 2019, options to purchase 141,986 shares of common stock remained outstanding under the 2012 Plan. The 2012 Plan was terminated in connection with the Company's initial public offering in February 2014, and accordingly, no new options are available for issuance under this plan. The 2012 Plan continues to govern outstanding awards granted thereunder.

The Company has a 2014 Equity Incentive Plan (2014 Plan) that provides for the grant of incentive stock options, within the meaning of Section 422 of the Internal Revenue Code, to the Company's employees and any parent and subsidiary corporation's employees, and for the grant of nonstatutory stock options, restricted stock, restricted stock units, restricted stock awards, stock appreciation rights, performance units and performance shares to its employees, directors and consultants and its parent and subsidiary corporations' employees and consultants.

As of December 31, 2019, awards with respect to 1,064,545 shares of the Company's common stock were outstanding, and 1,807,572 shares of common stock remained available for issuance under the 2014 Plan. The shares available for issuance under the 2014 Plan will be increased by any shares returned to the 2002 Plan, 2012 Plan and the 2014 Plan as a result of expiration or termination of awards (provided that the maximum number of shares that may be added to the 2014 Plan pursuant to such previously granted awards under the 2002 Plan and 2012 Plan is 2,328,569 shares). The number of shares available for issuance under the 2014 Plan also is increased annually on the first day of each fiscal year by an amount equal to the least of:

- 895,346 shares;
- 4% of the outstanding shares of common stock as of the last day of the Company's immediately preceding fiscal year; or
- such other amount as the Company's board of directors may determine.

For the year ended December 31, 2019, no additional shares were added to the 2014 Plan share reserve pursuant to the provision described above.

Stock options

Options typically expire between seven and ten years from the date of grant and vest over one to four year terms. Options have been granted to employees, directors and consultants of the Company, as determined by the board of directors, at the deemed fair market value of the shares underlying the options at the date of grant.

The activity for stock options under the Company's stock plans for the years ended December 31, 2019, 2018 and 2017 is as follows:

	Options	Price per share	Weighted-average exercise price	Remaining weighted-average contractual terms (in years)	Per share average intrinsic value
Outstanding as of December 31, 2016	2,355,527	\$0.60-\$58.95	\$ 28.22	5.42	\$ 38.95
Granted	64,498	83.30	83.30		
Exercised	(520,393)	0.60-58.95	24.16		
Forfeited	(63,173)	24.52-58.95	43.74		
Expired	(33)	8.70	8.70		
Outstanding as of December 31, 2017	1,836,426	0.60-83.30	30.77	4.58	88.31
Vested and exercisable as of December 31, 2017	1,176,504	0.60-83.30	24.33	4.39	94.75
Vested and expected to vest as of December 31, 2017	1,792,871	0.60-83.30	30.50	4.58	88.58
Outstanding as of December 31, 2017	1,836,426	0.60-83.30	30.77	4.58	88.31
Granted	—	—	—		
Exercised	(708,319)	0.60-58.95	24.22		
Forfeited	(771)	24.52-44.19	28.24		
Expired	—	—	—		
Outstanding as of December 31, 2018	1,127,336	0.75-83.30	34.89	3.84	89.28
Vested and exercisable as of December 31, 2018	851,039	0.75-83.30	32.12	3.75	92.05
Vested and expected to vest as of December 31, 2018	1,109,280	0.75-83.30	34.75	3.84	89.42
Outstanding as of December 31, 2018	1,127,336	0.75-83.30	34.89	3.84	89.28
Granted	—	—	—		
Exercised	(109,291)	0.75-58.95	28.45		
Forfeited	(37,161)	38.54-58.95	44.58		
Expired	—	—	—		
Outstanding as of December 31, 2019	980,884	0.75-83.30	35.24	2.84	34.07
Vested and exercisable as of December 31, 2019	929,825	0.75-83.30	34.73	2.81	34.64
Vested and expected to vest as of December 31, 2019	977,589	\$0.75-\$83.30	\$ 35.21	2.84	\$ 34.11

The total intrinsic value of options exercised during the years ended December 31, 2019, 2018, and 2017 was \$910, \$98,743, and \$33,931, respectively. The unrecognized compensation expense related to non-vested stock-based compensation granted under the Plans as of December 31, 2019 was \$691. This amount is expected to be recognized over a weighted-average period of 0.3 years.

Stock incentive awards

The Company grants restricted stock units (RSUs) and restricted stock awards (RSAs) under the 2014 Plan (Stock Awards). The Stock Awards vest either based solely on the satisfaction of time-based service conditions or on the satisfaction of time-based service conditions combined with performance criteria. Stock Awards are subject to forfeiture if the holder's services to the Company terminate before vesting.

Stock Awards granted with only time-based service vesting conditions generally vest over a four-year service period, as defined in the terms of each award. Stock Awards that vest based on the satisfaction of time-based service conditions combined with performance criteria generally vest over a three-year service and performance period, based on performance criteria established at the time of the award. The portion of the Stock Award that is earned may equal or be less than the targeted number of shares subject to the Stock Award depending on whether the performance criteria are met.

Stock Awards activity for the years ended December 31, 2019 and December 31, 2018 are summarized below:

		Performance and time-based	Total	Weighted- average grant date fair value per share
Restricted stock units	Time-based			
Unvested restricted stock units as of December 31, 2016	—	—	—	\$ —
Granted	42,028	13,109	55,137	90.05
Vested	—	—	—	—
Forfeited/canceled	—	—	—	—
Unvested restricted stock units as of December 31, 2017 ⁽¹⁾	<u>42,028</u>	<u>13,109</u>	<u>55,137</u>	<u>\$ 90.05</u>
Unvested and expected to vest restricted stock units outstanding as of December 31, 2017			48,589	\$ 89.95
Unvested restricted stock units as of December 31, 2017	42,028	13,109	55,137	\$ 90.05
Granted	31,877	—	31,877	143.50
Vested	(13,742)	(4,370)	(18,112)	89.35
Forfeited/canceled	(1,574)	—	(1,574)	106.55
Unvested restricted stock units as of December 31, 2018 ⁽¹⁾	<u>58,589</u>	<u>8,739</u>	<u>67,328</u>	<u>\$ 115.16</u>
Unvested and expected to vest restricted stock units outstanding as of December 31, 2018			62,504	\$ 115.98
Unvested restricted stock units as of December 31, 2018	58,589	8,739	67,328	\$ 115.16
Granted	87,902	—	87,902	75.56
Vested	(24,680)	(4,366)	(29,046)	123.53
Forfeited/canceled	(12,835)	(1,239)	(14,074)	102.89
Unvested restricted stock units as of December 31, 2019 ⁽¹⁾	<u>108,976</u>	<u>3,134</u>	<u>112,110</u>	<u>\$ 83.48</u>
Unvested and expected to vest restricted stock units outstanding as of December 31, 2019			103,087	\$ 83.22

		Performance and time-based		Weighted- average grant date fair value per share
Restricted stock awards	Time-based		Total	
Unvested restricted stock awards outstanding as of December 31, 2016	—	—	—	\$ —
Granted	20,789	20,785	41,574	91.52
Vested	—	—	—	—
Forfeited/canceled	—	—	—	—
Unvested restricted stock awards outstanding as of December 31, 2017 ⁽¹⁾	20,789	20,785	41,574	\$ 91.52
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2017			34,051	\$ 91.52
Unvested restricted stock awards outstanding as of December 31, 2017	20,789	20,785	41,574	\$ 91.52
Granted	22,645	33,964	56,609	130.89
Vested	(6,497)	(6,928)	(13,425)	91.52
Forfeited/canceled	—	—	—	—
Unvested restricted stock awards outstanding as of December 31, 2018 ⁽¹⁾	36,937	47,821	84,758	\$ 115.80
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2018			65,773	\$ 115.85
Unvested restricted stock awards outstanding as of December 31, 2018	36,937	47,821	84,758	\$ 115.80
Granted	54,853	40,166	95,019	86.10
Vested	(13,627)	(15,732)	(29,359)	115.37
Forfeited/canceled	(7,093)	(9,627)	(16,720)	109.11
Unvested restricted stock awards outstanding as of December 31, 2019 ⁽¹⁾	71,070	62,628	133,698	\$ 95.74
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2019			79,473	\$ 90.31

(1) Outstanding restricted stock units and restricted stock awards are based on the maximum payout of the targeted number of shares.

As of December 31, 2019, the unrecognized compensation cost related to unvested employee restricted stock units and restricted stock awards was \$2,829, excluding estimated forfeitures. This amount is expected to be recognized over a weighted-average period of 2.7 years.

Employee stock purchase plan

The Company's 2014 Employee Stock Purchase Plan (ESPP) provides for the grant to all eligible employees an option to purchase stock under the ESPP, within the meaning Section 423 of the Internal Revenue Code. The ESPP permits participants to purchase common stock through payroll deductions of up to 15% of their eligible compensation, which includes a participant's base straight time gross earnings, incentive compensation, bonuses, overtime and shift premium, but exclusive of payments for equity compensation and other similar compensation. A participant may purchase a maximum of 1,500 shares during a purchase period. Amounts deducted and accumulated by the participant are used to purchase shares of the Company's common stock at the end of each six-month period. The purchase price of the shares will be 85% of the lower of the fair market value of the Company's common stock on the first trading day of each offering period or on the exercise date. The offering periods are currently approximately six months in length beginning on the first business day on or after March 1 and September 1 of each year and ending on the first business day on or after September 1 and March 1 approximately six months later.

As of December 31, 2019, a total of 698,632 shares of common stock were available for sale pursuant to the ESPP.

The number of shares available for sale under the ESPP is increased annually on the first day of each fiscal year equal to the least of:

- 179,069 shares;
- 1.5% of the outstanding shares of the Company's common stock on the last day of the Company's immediately preceding fiscal year; or
- such other amount as may be determined by the administrator.

For 2019, no additional shares were added to the ESPP share reserve pursuant to the provision described above.

Stock-based compensation

Stock-based compensation expense recognized for the years ended December 31, 2019, 2018 and 2017, was as follows:

(amounts in thousands)

	Years ended December 31,		
	2019	2018	2017
Stock-based compensation expense by type of award:			
Stock option plan awards	\$ 2,977	\$ 6,015	\$ 7,652
Restricted stock units and restricted stock awards	5,413	5,890	1,447
Employee stock purchase plan	739	885	541
Total stock-based compensation expense	<u>\$ 9,129</u>	<u>\$ 12,790</u>	<u>\$ 9,640</u>

Employee stock-based compensation expense was calculated based on awards of stock options, restricted stock units and restricted stock awards ultimately expected to vest based on the Company's historical award cancellations. The employee stock-based compensation expense recognized for the years ended December 31, 2019, 2018 and 2017 has been reduced for estimated forfeitures of stock option plan awards at a rate of 7.3%, 7.3% and 7.3%, respectively. The employee stock-based compensation expense recognized for the years ended December 31, 2019, 2018 and 2017 was reduced for estimated forfeitures of restricted stock at a rate of 4.4%, 4.7% and 6.0%, respectively. ASC 718 – *Compensation-Stock Compensation* requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

For the years ended December 31, 2019, 2018 and 2017, respectively, stock-based compensation expense recognized under ASC 718, included in cost of revenue, research and development expense, sales and marketing expense, and general and administrative expense was as follows:

	Years ended December 31,		
	2019	2018	2017
<i>(amounts in thousands)</i>			
Cost of revenue	\$ 890	\$ 1,060	\$ 845
Research and development	1,100	1,314	1,015
Sales and marketing	1,755	2,355	1,558
General and administrative	5,384	8,061	6,222
Total stock-based compensation expense	<u>\$ 9,129</u>	<u>\$ 12,790</u>	<u>\$ 9,640</u>

Valuation assumptions

The employee stock-based compensation expense is recognized under ASC 718. Stock-based compensation cost for stock awards is based on the number of shares ultimately expected to vest, estimated at each reporting date based on management's expectations regarding the relevant performance criteria. The value of the award that is ultimately expected to vest is recognized as expense on a straight-line basis over the employee's requisite service period for stock awards with a time-based service condition and on a graded vesting basis over the employee's requisite service period for stock awards with performance and time-based service conditions.

Stock-based compensation cost for stock options and employee stock purchase plan are determined at the grant date using the Black-Scholes option pricing model.

The following table displays the assumptions that have been applied to estimate the fair value of stock option awards on the date of grant using the Black-Scholes option pricing model. During 2019 and 2018, the Company did not grant any stock option awards.

	2017
Expected term (years)	3.54-4.00
Risk free interest rate	1.65-1.73%
Expected dividend yield	None
Volatility	41.61-42.15%

Under these assumptions, the total weighted-average fair value of stock options granted during the year ended December 31, 2017 was \$,929.

The following table displays the assumptions that have been applied to estimate the fair value of the Company's shares to be issued under the ESPP using the Black-Scholes option pricing model.

	2019	2018	2017
Expected term (years)	0.50	0.50	0.50
Risk free interest rate	1.75-2.53%	1.63-2.46%	1.15-1.63%
Expected dividend yield	None	None	None
Volatility	44.00-47.00%	37.34-44.00%	42.35-45.34%

401(k) retirement savings plan

The Company maintains a 401(k) retirement savings plan for the benefit of eligible employees. Under the terms of this plan, eligible employees are able to make contributions to the plan on a tax-deferred basis. The Company began matching employees' contributions, effective January 1, 2017. The Company contributed \$871, \$865, and \$557, net of forfeitures, to the 401(k) plan for the years ended December 31, 2019, 2018 and 2017, respectively.

9. Commitments and contingencies

Non-cancelable contractual obligations

The Company enters into non-cancelable contractual obligations for software licenses and maintenance agreements. At December 31, 2019, the minimum aggregate payments due under specified non-cancelable contractual obligations are summarized as follows:

		Non-cancelable contractual obligations
<i>(amounts in thousands)</i>		
2020	\$	578
2021		457
2022		—
2023		—
2024		—
Thereafter		—
Total	\$	1,035

Purchase obligations

The Company had approximately \$54,500 of outstanding purchase orders with its outside vendors and suppliers as of December 31, 2019.

Warranty obligation

The following table identifies the changes in the Company's aggregate product warranty liabilities for the twelve-month periods ended December 31, 2019, 2018 and 2017, respectively:

<i>(amounts in thousands)</i>	December 31,		
	2019	2018	2017
Product warranty liability at beginning of period	\$ 9,530	\$ 6,171	\$ 3,480
Accruals for warranties issued	8,131	7,693	5,275
Adjustments related to preexisting warranties (including changes in estimates)	1,433	90	200
Settlements made (in cash or in kind)	(6,523)	(4,424)	(2,784)
Product warranty liability at end of period	\$ 12,571	\$ 9,530	\$ 6,171

Legislation and HIPAA

The healthcare industry is subject to numerous laws and regulations of federal, state and local governments. These laws and regulations include, but are not necessarily limited to, matters such as licensure, accreditation, government healthcare program participation requirements, reimbursement for patient services, and Medicare and Medicaid fraud and abuse. Government activity has continued with respect to investigations and allegations concerning possible violations of fraud and abuse statutes and regulations by healthcare providers. Violations of these laws and regulations could result in exclusion from government healthcare programs together with the imposition of significant fines and penalties, as well as significant repayments for patient services previously billed.

The Company believes that it is in compliance in all material respects with applicable fraud and abuse regulations and other applicable government laws and regulations. Compliance with such laws and regulations can be subject to future government review and interpretation as well as regulatory actions unknown or unasserted at this time. The Health Insurance Portability and Accountability Act of 1996 (HIPAA) ensures health insurance portability, reduces healthcare fraud and abuse, guarantees security and privacy of health information, and enforces standards for health information. The Health Information Technology for Economic and Clinical Health Act (HITECH Act) imposes notification requirements of certain security breaches relating to protected health information. The Company believes that it complies in all material respects with the provisions of those regulations that are applicable to the Company's business.

Legal proceedings

Intellectual property lawsuit

On November 21, 2019, Breathe Technologies, Inc. (Breathe), a subsidiary of Hill-Rom Holdings, filed a lawsuit against Inogen, Inc., New Aera, Inc., Silverbow Development, LLC, and Todd W. Allum in the United States District Court for the Northern District of California. Breathe alleged willful infringement on certain patents, declared that inventorship was incorrectly assigned and their rights to certain patents filed by New Aera, Inc. and Silverbow Development LLC, breach of contract, inducing breach of contract, interference with contract, and violation of California business and professional code section 17200. The complaint seeks inventorship of patents to be corrected, injunctive relief, compensatory and punitive damages in an unspecified amount including trebling of all damages awarded with respect to infringement of the '250 patent, costs and expenses, including attorneys' fees and expert fees, prejudgment and post-judgment interest and such other relief as the court deems proper. The Company intends to vigorously defend itself against these allegations.

Securities class action and derivative lawsuits

On March 6, 2019, plaintiff William Fabbri filed a lawsuit against Inogen, Scott Wilkinson, and Alison Bauerlein, in the United States District Court for the Central District of California on behalf of a purported class of purchasers of the Company's securities. On March 21, 2019, plaintiff Steven Friedland filed a substantially similar lawsuit against the same defendants in the same court. On May 20, 2019, the court issued an order consolidating the two lawsuits under the name *In re Inogen, Inc. Sec. Litig.*, No. 2:19-cv-01643-FMO-AGR, appointing Dr. John Vasil and Paragon Fund Management as lead plaintiffs, and appointing Robbins Geller Rudman & Dowd LLP and Glancy Prongay & Murray LLP as lead plaintiffs' counsel. On July 10, 2019, the lead plaintiffs filed a consolidated amended complaint on behalf of a purported class of purchasers of the Company's common stock between November 8, 2017 and May 7, 2019. The complaint generally alleges that the defendants failed to disclose that: (i) Inogen had overstated the true size of the total addressable market for its portable oxygen concentrators and had misstated the basis for its calculation of the total addressable market; (ii) Inogen had falsely attributed its sales growth to the strong sales acumen of its salesforce, rather than to deceptive sales practices; (iii) the growth in Inogen's domestic business-to-business sales to home medical equipment providers was inflated, unsustainable and was eroding direct-to-consumer sales; and (iv) Inogen's decision to focus on sales over rentals of portable oxygen concentrators harmed its ability to serve the Medicare market, in violation of sections 10(b) and 20(a) of the Securities Exchange Act of 1934, as amended. The complaint seeks compensatory damages in an unspecified amount, costs and expenses, including attorneys' fees and expert fees, prejudgment and post-judgment interest and such other relief as the court deems proper. On January 2, 2020, the court dismissed the consolidated amended complaint with leave to amend. On January 9, 2020, the plaintiffs filed a second amended complaint generally alleging substantially similar claims as those in the previous complaint. On January 23, 2020, the defendants filed a motion to dismiss the second amended complaint. The Company intends to vigorously defend itself against these allegations.

On June 26, 2019, plaintiff Twana Brown filed a shareholder derivative lawsuit against Inogen, Scott Wilkinson, Alison Bauerlein, Benjamin Anderson-Ray, Scott Beardsley, R. Scott Greer, Raymond Huggenberger, Heath Lukatch, Loren McFarland, and Heather Rider in the United States District Court for the Central District of California. The complaint purports to bring claims on behalf of Inogen against the individual defendants for breaches of their fiduciary duties as directors and/or officers of Inogen, unjust enrichment, waste of corporate assets and violations of section 14(a) of the Securities Exchange Act of 1934, as amended. The complaint generally alleges similar claims to the securities class action. The complaint seeks compensatory damages and restitution in an unspecified amount, changes to the Company's corporate governance and internal procedures, costs and expenses, including attorneys' fees and expert fees, and such other relief as the court deems proper. On August 5, 2019, the court issued an order staying the derivative action pending the resolution of the motion to dismiss stage in *In re Inogen, Inc. Sec. Litig.* Between October 7, 2019 and October 31, 2019, three additional shareholder derivative complaints were filed in the United States District Court for the Central District of California based on similar factual allegations. These lawsuits purport to bring claims on behalf of Inogen for breach of fiduciary duty, unjust enrichment, waste of corporate assets, insider trading and misappropriation of information, and violations of section 14(a) of the Securities Exchange Act of 1934, as amended. On January 13, 2020, the court consolidated the four derivative lawsuits before it under the name *In re Inogen, Inc. S'holder Deriv. Litig.*, Lead Case No. 2:19-cv-5568-FMO-AGR and ordered that the consolidated action be stayed pending the resolution of the motion to dismiss stage in *In re Inogen, Inc., Sec. Litig.*

On September 13, 2019, plaintiff Dustin Weller filed a shareholder derivative lawsuit against Inogen, Scott Wilkinson, Alison Bauerlein, Benjamin Anderson-Ray, Scott Beardsley, R. Scott Greer, Raymond Huggenberger, Heath Lukatch, Loren McFarland, and Heather Rider in the United States District Court for the District of Delaware captioned *Weller v. Wilkinson, et al.*, No. 1:19-cv-01723-MN. On October 17, 2019, plaintiff Sharokh Soltanipour filed a shareholder derivative lawsuit against the same defendants in the same court, captioned *Soltanipour v. Wilkinson, et al.*, No. 1:19-cv-1968-MN. The complaints generally allege similar claims to those in *In re Inogen, Inc., S'holder Deriv. Litig.* The complaints purport to bring claims on behalf of Inogen for breach of fiduciary duty, unjust enrichment, waste of corporate assets, abuse of control, gross mismanagement, insider selling and misappropriation of information, violations of section 14(a) of the Securities Exchange Act of 1934, as amended, and for contribution from certain of the individual defendants. The complaints seek compensatory damages in unspecified amounts, changes to the Company's corporate governance and internal procedures, return of compensation, disgorgement of profits from sale of stock, costs and expenses, including attorneys' fees and expert fees, and such other relief as the court deems proper. On December 23, 2019 and January 6, 2020, plaintiffs filed cross-motions to consolidate the two cases and to appoint lead counsel.

Other litigation

In addition to the lawsuits discussed above, the Company is party to various legal proceedings arising in the normal course of business. The Company carries insurance, subject to specified deductibles under the policies, to protect against losses from certain types of legal claims. At this time, the Company does not anticipate that any of these other proceedings arising in the normal course of business will have a material adverse effect on the Company's business. Regardless of the outcome, litigation can have an adverse impact on the Company because of defense and settlement costs, diversion of management resources, and other factors.

10. Foreign currency exchange contracts and hedging

As of December 31, 2019 and December 31, 2018, the Company's total non-designated and designated derivative contracts had notional amounts totaling approximately \$,396 and \$35,708, respectively, and \$2,336 and \$21,374, respectively. These contracts were comprised of offsetting contracts with the same counterparty, each expires within one to twelve months. During the years ended December 31, 2019, 2018, and 2017, these contracts had, net of tax, an unrealized loss of \$94, an unrealized gain of \$404, and an unrealized loss of \$121, respectively.

The nonperformance risk of the Company and the counterparty did not have a material impact on the fair value of the derivatives. During the years ended December 31, 2019, 2018 and 2017, there were no ineffective portions relating to these hedges and the hedges remained effective through their respective settlement dates. As of December 31, 2019, the Company had eleven designated hedges and one non-designated hedges. As of December 31, 2018, the Company had twenty-nine designated hedges and four non-designated hedges.

11. Quarterly summary of information (unaudited)

The following table sets forth the Company's unaudited quarterly statements of income data in dollars for each of the eight quarters in the period ended December 31, 2019. The Company has prepared the quarterly statements of income data on a basis consistent with the audited financial statements. In the opinion of management, the financial information reflects all adjustments, consisting only of normal recurring adjustments, which the Company considers necessary for a fair presentation of this data. The results of historical periods are not necessarily indicative of the results of operations for any future period.

(amounts in thousands, except share and per share amounts)

Quarterly Results 2019	Q1 March	Q2 June	Q3 September	Q4 December
Total revenue	\$ 90,202	\$ 101,063	\$ 91,761	\$ 78,917
Gross profit	44,409	50,215	43,315	33,922
Income (loss) before provision (benefit) for income taxes	6,072	13,684	8,753	(4,237)
Provision (benefit) for income taxes	770	3,524	1,890	(2,862)
Net income (loss)	5,302	10,160	6,863	(1,375)
Net income (loss) per share attributable to common stockholders:				
Basic	\$ 0.24	\$ 0.47	\$ 0.31	\$ (0.06)
Diluted (1)	\$ 0.24	\$ 0.45	\$ 0.31	\$ (0.06)
Weighted-average number of shares used in calculating net income (loss) per share attributable to common stockholders:				
Basic common shares	21,750,305	21,815,634	21,840,473	21,878,004
Diluted common shares	22,534,885	22,359,679	22,191,688	21,878,004

(1) Due to net loss for period Q4 December, dilutive loss per share is the same as basic.

(amounts in thousands, except share and per share amounts)

Quarterly Results 2018	Q1 March	Q2 June	Q3 September	Q4 December
Total revenue	\$ 79,051	\$ 97,238	\$ 95,291	\$ 86,531
Gross profit	37,727	48,470	48,813	43,570
Income before benefit for income taxes	9,687	13,646	11,299	5,823
Benefit for income taxes	(1,071)	(964)	(5,133)	(4,222)
Net income	10,758	14,610	16,432	10,045
Net income per share attributable to common stockholders:				
Basic	\$ 0.51	\$ 0.69	\$ 0.77	\$ 0.47
Diluted	\$ 0.48	\$ 0.65	\$ 0.73	\$ 0.44
Weighted-average number of shares used in calculating net income per share attributable to common stockholders:				
Basic common shares	21,026,154	21,172,170	21,324,256	21,544,202
Diluted common shares	22,295,213	22,503,749	22,659,052	22,600,038

Earnings per share is computed independently for each of the quarters presented. Therefore, the sum of the quarterly amounts will not necessarily equal the total for the year.

Schedule II: Valuation and Qualifying Accounts

(amounts in thousands)	Balance at Beginning of Year	Additions	Deletions	Adjustments	Balance at End of Year
Year ended December 31, 2019					
Allowance for doubtful accounts (1)	\$ 693	\$ 612	\$ 1,100	\$ —	\$ 205
Allowance for sales returns (2)	890	17,036	16,763	—	1,163
Allowance for rental revenue adjustments (3)	438	1,762	1,789	—	411
Allowance for rental asset loss (4)	594	188	387	—	395
Year ended December 31, 2018					
Allowance for doubtful accounts (1)	\$ 1,415	\$ 1,685	\$ 2,677	\$ 270	\$ 693
Allowance for sales returns (2)	904	15,834	15,848	—	890
Allowance for rental revenue adjustments (3)	947	2,678	2,917	(270)	438
Allowance for rental asset loss (4)	754	408	568	—	594
Year ended December 31, 2017					
Allowance for doubtful accounts (1)	\$ 1,869	\$ 3,864	\$ 4,418	\$ 100	\$ 1,415
Allowance for sales returns (2)	585	9,909	9,590	—	904
Allowance for rental revenue adjustments (3)	6,078	5,057	10,088	(100)	947
Allowance for rental asset loss (4)	725	561	532	—	754

- (1) The additions to the allowance for doubtful accounts represent the estimates of bad debt expense based upon factors for which the company evaluates the collectability of accounts receivable, with actual recoveries netted into additions. Deductions are the actual write-offs of the receivables.
- (2) The additions to the allowance for sales returns represent estimates of returns based upon historical returns experience, primarily for the direct-to-consumer sales channel. Deductions are the actual returns of products.
- (3) The additions to the allowance for rental revenue adjustments represent estimates of revenue adjustments that will need to be recorded for billing adjustments on rental revenue, net of recoveries. Deductions are the actual adjustments and write-offs of the rental receivables for such revenue adjustments.
- (4) The additions to the allowance for rental asset loss represent estimated losses of the Company's rental assets that will potentially be unrecoverable from the patient. Deductions are the actual write-offs of the rental assets.

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
2.1	Agreement and Plan of Merger dated August 6, 2019, by and among Inogen, Inc., Move Merger Sub, Inc., New Aera, Inc. and Gregory J. Kapust, as the entitled holders' agent.	8-K	2.1	08/07/19
3.1	Thirteenth Amended and Restated Certificate of Incorporation of the Registrant.	Filed Herewith		
3.2	Amended and Restated Bylaws of the Registrant.	Filed Herewith		
4.1	Specimen Common Stock Certificate of the Registrant.	S-1/A	4.1	01/16/14
4.2	Ninth Amended and Restated Investors' Rights Agreement, dated March 12, 2012, by and among the Registrant and the investors named therein, as amended.	S-1/A	4.2	01/16/14
4.3	Amendment No. 2 to Ninth Amended and Restated Investor Rights Agreement, dated December 10, 2018.	10-K	4.3	02/26/19
4.4	Description of Securities.	Filed Herewith		
10.1+	Form of Director and Executive Officer Indemnification Agreement.	S-1	10.1	11/27/13
10.2+	2002 Stock Plan, as amended.	S-1	10.2	11/27/13
10.3+	Form of Notice of Stock Option Grant and Stock Option Agreement under the 2002 Stock Plan, as amended.	S-1	10.3	11/27/13
10.4+	2012 Equity Incentive Plan, as amended.	S-1	10.4	11/27/13
10.5+	Form of Stock Option Agreement under the 2012 Equity Incentive Plan.	S-1	10.5	11/27/13
10.6+	2014 Equity Incentive Plan.	S-1/A	10.6	01/28/14
10.7A+	Form of Stock Option Agreement under the 2014 Equity Incentive Plan.	10-Q	10.1	11/07/17
10.7B+	Form of Restricted Stock Unit Agreement – Time-Based under the 2014 Equity Incentive Plan.	10-Q	10.2	11/07/17
10.7C+	Form of Restricted Stock Unit Agreement – Performance-Based under the 2014 Equity Incentive Plan.	10-Q	10.3	11/07/17
10.7D+	Form of Restricted Stock Award Agreement – Time-Based under the 2014 Equity Incentive Plan.	10-Q	10.4	11/07/17
10.7E+	Form of Restricted Stock Award Agreement – Performance-Based under the 2014 Equity Incentive Plan.	10-Q	10.5	11/07/17
10.8+	2014 Employee Stock Purchase Plan.	S-1/A	10.8	01/28/14
10.9+	Executive Incentive Compensation Plan.	S-1	10.9	11/27/13
10.10+	Amended and Restated Employment and Severance Agreement, effective March 1, 2017, between the Registrant and Scott Wilkinson.	10-K	10.11	02/28/17
10.11+	Employment Agreement, dated October 1, 2013, between the Registrant and Alison Bauerlein.	S-1/A	10.12	12/23/13
10.12+	Employment Agreement, dated October 1, 2013, between the Registrant and Matt Scribner.	S-1/A	10.13	12/23/13
10.13+	Employment Agreement, dated October 1, 2013, between the Registrant and Brenton Taylor.	S-1/A	10.14	12/23/13

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
10.14	Multi-Purpose Commercial Building Lease, dated February 1, 2010, between the Registrant and Rockbridge Investments, L.P., as amended.	S-1	10.17	11/27/13
10.15	Lease Agreement, dated May 3, 2012, between the Registrant and Bayview (TX) Holding LLC.	S-1	10.18	11/27/13
10.16	License Agreement, dated July 23, 2007, between the Registrant and Air Products and Chemicals, Inc.	S-1/A	10.19	12/23/13
10.17	Amendment to License Agreement, dated October 23, 2009, between the Registrant and Air Products and Chemicals, Inc.	S-1	10.20	11/27/13
10.18	Amendment No. 2 to License Agreement, dated October 4, 2010, between the Registrant and Air Products and Chemicals, Inc.	S-1	10.21	11/27/13
10.19	Amendment No. 3 to License Agreement, dated March 22, 2011, between the Registrant and Air Products and Chemicals, Inc.	S-1	10.22	11/27/13
10.20	Lease Agreement, dated December 4, 2014, between the Registrant and TCIT Dallas Industrial, Inc.	10-K	10.23	04/27/15
10.21	Second Amendment to lease, dated January 20, 2015, between Registrant and Rockbridge Investments, L.P.	10-Q	10.1	05/12/15
10.22+	Amended and Restated Employment and Severance Agreement, effective January 1, 2017, between the Registrant and Byron Myers.	10-K	10.28	02/28/17
10.23	First Amendment and Expansion of Premises entered into as of November 9, 2015, by and between Registrant and ATLAS 35-75 INDUSTRIAL, LP.	8-K	10.1	11/10/15
10.24*	Private Label Distribution Agreement, effective as of November 12, 2014, between the Registrant and Applied Home Healthcare Equipment LLC, as amended.	10-Q	10.1	11/03/16
10.25*	Addendum to Private Label Distribution Agreement between the Company and Applied Home Healthcare Equipment LLC, as amended.	10-Q	10.1	05/09/17
10.26*	First Amendment to Private Label Distribution Agreement by and between the Company and Applied Home Healthcare Equipment, LLC, dated as of February 21, 2018.	10-Q	10.1	04/30/18
10.27*	Second Amendment to Private Label Distribution Agreement by and between the Company and OxyGo HQ, LLC, formerly known as Applied Home Healthcare Equipment, LLC, dated as of March 1, 2019.	10-Q	10.1	05/07/19
10.28	Lease Agreement by and between the Company, Cleveland American, LLC and Holdings Cleveland American, LLC, dated as of May 31, 2017.	10-Q	10.1	08/07/18
10.29	First Amendment to Lease Agreement between the Company, Cleveland American, LLC and Holdings Cleveland American, LLC, dated as of January 10, 2018.	10-Q	10.2	08/07/18
10.30	Second Amendment to Lease Agreement between the Company, Cleveland American, LLC and Holdings Cleveland American, LLC, dated as of May 1, 2018.	10-Q	10.3	08/07/18
10.31	Lease Agreement, dated June 19, 2019, by and between the Company, and RAF Pacifica Group – Real Estate Fund IV, LLC, APG Hollywood Center, LLC, and APG Airport Freeway Center, LLC.	10-Q	10.1	08/07/19
10.32	Lease Agreement, dated August 29, 2019, by and between the Company, and TCG Industrial Shiloh LLC.	10-Q	10.1	11/05/19

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
10.33	Lease Agreement Amendment No. 1, dated November 1, 2019, by and between the Company, and TCG Industrial Shiloh LLC.	10-Q	10.2	11/05/19
10.34+	Transition Agreement and Release by and between the Company and Matthew Scribner, dated September 14, 2018.	8-K	10.1	09/17/18
10.35+	Employment and Severance Agreement, dated August 17, 2018, between the Registrant and Bart Sanford.	10-Q	10.2	11/06/18
23.1	Consent of Deloitte & Touche LLP, Independent Registered Public Accounting Firm.	Filed Herewith		
24.1	Powers of Attorney (contained in the signature page to this Annual Report on Form 10-K).	Filed Herewith		
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed Herewith		
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a 14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.	Filed Herewith		
32.1~	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.			
101.INS	XBRL Instance Document			
101.SCH	XBRL Taxonomy Extension Schema Document			
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document			
101.LAB	XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document			
101.DEF	XBRL Taxonomy Extension Definition Document			
104	The cover page of this Annual Report on Form 10-K, formatted in inline XBRL.			

+ Indicates a management contract or compensatory plan.

* Portions of the exhibit have been omitted pursuant to an order granted by the Securities and Exchange Commission for confidential treatment.

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

SIGNATURES

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

INOGEN, INC.
(Registrant)

By: /s/ Scott Wilkinson
Scott Wilkinson
Chief Executive Officer
President
Director
(Principal Executive Officer)

Dated: February 25, 2020

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Scott Wilkinson and Alison Bauerlein, and each of them, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and resubstitution, for him or her and in his or her name, place and stead, in any and all capacities, to sign any and all amendments to this Annual 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, granting unto said attorneys-in-fact and agents, and each of them, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, or their or his or her substitutes, may lawfully do or cause to be done by virtue thereof.

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

Signature	Title	Date
<u>/s/ Scott Wilkinson</u> Scott Wilkinson	Chief Executive Officer, President and Director (Principal Executive Officer)	February 25, 2020
<u>/s/ Alison Bauerlein</u> Alison Bauerlein	Chief Financial Officer (Principal Accounting and Financial Officer)	February 25, 2020
<u>/s/ Heath Lukatch, Ph.D.</u> Heath Lukatch, Ph.D.	Chairman of the Board	February 25, 2020
<u>/s/ Benjamin Anderson-Ray</u> Benjamin Anderson-Ray	Director	February 25, 2020
<u>/s/ Heather Rider</u> Heather Rider	Director	February 25, 2020
<u>/s/ Loren McFarland</u> Loren McFarland	Director	February 25, 2020
<u>/s/ R. Scott Greer</u> R. Scott Greer	Director	February 25, 2020
<u>/s/ Scott Beardsley</u> Scott Beardsley	Director	February 25, 2020
<u>/s/ Raymond Huggenberger</u> Raymond Huggenberger	Director	February 25, 2020

THIRTEENTH AMENDED AND RESTATED**CERTIFICATE OF INCORPORATION OF****INOGEN, INC.**

Inogen, Inc., a corporation organized and existing under the laws of the State of Delaware (the “Corporation”), certifies that:

A. The name of the Corporation is Inogen, Inc. The Corporation was originally incorporated under the same name, and its original Certificate of Incorporation was filed with the Secretary of State of the State of Delaware on November 27, 2001.

B. This Thirteenth Amended and Restated Certificate of Incorporation (this “Amended and Restated Certificate of Incorporation”) was duly adopted in accordance with Sections 242 and 245 of the General Corporation Law of the State of Delaware, and has been duly approved by the written consent of the stockholders of the Corporation in accordance with Section 228 of the General Corporation Law of the State of Delaware.

C. The text of the Twelfth Amended and Restated Certificate of Incorporation is amended and restated to read as set forth in Exhibit A attached hereto.

IN WITNESS WHEREOF, Inogen, Inc. has caused this Amended and Restated Certificate of Incorporation to be signed by Raymond Huggenberger, a duly authorized officer of the Corporation, on February 20, 2014.

/s/ Raymond Huggenberger

Raymond Huggenberger

President and Chief Executive Officer

EXHIBIT A

ARTICLE I

The name of the corporation is Inogen, Inc. (the “Corporation”).

ARTICLE II

The address of the Corporation’s registered office in the State of Delaware is 2711 Centerville Road, Suite 400, City of Wilmington, County of New Castle, Delaware 19808. The name of its registered agent at such address is the Corporation Service Company.

ARTICLE III

The nature of the business or purposes to be conducted or promoted by the Corporation is to engage in any lawful act or activity for which corporations may be organized under the Delaware General Corporation Law (“DGCL”).

ARTICLE IV

Section 1. This Corporation is authorized to issue two classes of stock, to be designated respectively, Common Stock and Preferred Stock. The total number of shares of stock that the Corporation shall have authority to issue is two hundred ten million (210,000,000) shares, of which two hundred million (200,000,000) shares are Common Stock, \$0.001 par value, and ten million (10,000,000) shares are Preferred Stock, \$0.001 par value.

Section 2. Each share of Common Stock shall entitle the holder thereof to one (1) vote on any matter submitted to a vote at a meeting of stockholders.

Section 3. The Preferred Stock may be issued from time to time in one or more series pursuant to a resolution or resolutions providing for such issue duly adopted by the Board of Directors (authority to do so being hereby expressly vested in the Board of Directors). The Board of Directors is further authorized, subject to limitations prescribed by law, to fix by resolution or resolutions the designations, powers, preferences and rights, and the qualifications, limitations or restrictions thereof, of any wholly unissued series of Preferred Stock, including, without limitation, authority to fix by resolution or resolutions the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), redemption price or prices, and liquidation preferences of any such series, and the number of shares constituting any such series and the designation thereof, or any of the foregoing. The Board of Directors is further authorized to increase (but not above the total number of authorized shares of the class) or decrease (but not below the number of shares of any such series then outstanding) the number of shares of any series, the number of which was fixed by it, subsequent to the issuance of shares of such series, subject to the powers, preferences and rights, and the qualifications, limitations and restrictions thereof stated in this Amended and Restated Certificate of Incorporation or the resolution of the Board of Directors originally fixing the number of shares of such series. If the number of shares of any series is so decreased, then the Corporation shall take all such steps as are necessary to cause the shares constituting such decrease to resume the status which they had prior to the adoption of the resolution originally fixing the number of shares of such series.

Section 4. Except as otherwise required by law, holders of Common Stock shall not be entitled to vote on any amendment to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock) that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together as a class with the holders of one or more other such series, to vote thereon by law or pursuant to this Amended and Restated Certificate of Incorporation (including any certificate of designation filed with respect to any series of Preferred Stock).

ARTICLE V

Section 1. The number of directors that constitutes the entire Board of Directors of the Corporation shall be determined in the manner set forth in the Bylaws of the Corporation. At each annual meeting of stockholders, directors of the Corporation shall be elected to hold office until the expiration of the term for which they are elected and until their successors have been duly elected and qualified or until their earlier resignation or removal; except that if any such meeting shall not be so held, such election shall take place at a stockholders' meeting called and held in accordance with the DGCL.

Section 2. From and after the effectiveness of this Amended and Restated Certificate of Incorporation, the directors of the Corporation (other than any who may be elected by holders of Preferred Stock under specified circumstances) shall be divided into three classes as nearly equal in size as is practicable, hereby designated Class I, Class II and Class III. Directors already in office shall be assigned to each class at the time such classification becomes effective in accordance with a resolution or resolutions adopted by the Board of Directors. At the first annual meeting of stockholders following the date hereof, the term of office of the Class I directors shall expire and Class I directors shall be elected for a full term of three years. At the second annual meeting of stockholders following the date hereof, the term of office of the Class II directors shall expire and Class II directors shall be elected for a full term of three years. At the third annual meeting of stockholders following the date hereof, the term of office of the Class III directors shall expire and Class III directors shall be elected for a full term of three years. At each succeeding annual meeting of stockholders, directors shall be elected for a full term of three years to succeed the directors of the class whose terms expire at such annual meeting. If the number of directors is changed, any newly created directorships or decrease in directorships shall be so apportioned hereafter among the classes as to make all classes as nearly equal in number as is practicable, *provided that* no decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

ARTICLE VI

Section 1. Any director or the entire Board of Directors may be removed from office at any time, but only for cause, and only by the affirmative vote of the holders of at least a majority of the voting power of the issued and outstanding capital stock of the Corporation entitled to vote in the election of directors.

Section 2. Except as otherwise provided for or fixed by or pursuant to the provisions of Article IV hereof in relation to the rights of the holders of Preferred Stock to elect directors under specified circumstances, newly created directorships resulting from any increase in the number of directors, created in accordance with the Bylaws of the Corporation, and any vacancies on the Board of Directors resulting from death, resignation, disqualification, removal or other cause shall be filled only by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the Board of Directors, or by a sole remaining director, and not by the stockholders. A person so elected by the Board of Directors to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen until his or her successor shall have been duly elected and qualified, or until such director's earlier death, resignation or removal. No decrease in the number of directors constituting the Board of Directors shall shorten the term of any incumbent director.

ARTICLE VII

Section 1. The Corporation is to have perpetual existence.

Section 2. The business and affairs of the Corporation shall be managed by or under the direction of the Board of Directors. In addition to the powers and authority expressly conferred upon them by statute or by this Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation, the directors are hereby empowered to exercise all such powers and do all such acts and things as may be exercised or done by the Corporation.

Section 3. In furtherance and not in limitation of the powers conferred by statute, the Board of Directors is expressly authorized to adopt, alter, amend or repeal the Bylaws of the Corporation. The affirmative vote of at least a majority of the Board of Directors then in office shall be required in order for the Board of Directors to adopt, amend, alter or repeal the Corporation's Bylaws. The Corporation's Bylaws may also be adopted, amended, altered or repealed by the stockholders of the Corporation. Notwithstanding the above or any other provision of this Amended and Restated Certificate of Incorporation, the Bylaws of the Corporation may not be amended, altered or repealed except in accordance with Article XI of the Bylaws. No Bylaw hereafter legally adopted, amended, altered or repealed shall invalidate any prior act of the directors or officers of the Corporation that would have been valid if such Bylaw had not been adopted, amended, altered or repealed.

Section 4. The election of directors need not be by written ballot unless the Bylaws of the Corporation shall so provide.

Section 5. No stockholder will be permitted to cumulate votes at any election of directors.

ARTICLE VIII

Section 1. Any action required or permitted to be taken by the stockholders of the Corporation must be effected at a duly called annual or special meeting of stockholders of the Corporation and may not be effected by any consent in writing by such stockholders.

Section 2. Special meetings of stockholders of the Corporation may be called only by the Chairperson of the Board of Directors, the Chief Executive Officer, the President or the Board of Directors acting pursuant to a resolution adopted by a majority of the Board of Directors, and any power of stockholders to call a special meeting of stockholders is specifically denied. Only such business shall be considered at a special meeting of stockholders as shall have been stated in the notice for such meeting.

Section 3. Advance notice of stockholder nominations for the election of directors and of business to be brought by stockholders before any meeting of the stockholders of the Corporation shall be given in the manner and to the extent provided in the Bylaws of the Corporation.

ARTICLE IX

Section 1. To the fullest extent permitted by the DGCL as the same exists or as may hereafter be amended from time to time, a director of the Corporation shall not be personally liable to the Corporation or its stockholders for monetary damages for breach of fiduciary duty as a director. If the DGCL is amended to authorize corporate action further eliminating or limiting the personal liability of directors, then the liability of a director of the Corporation shall be eliminated or limited to the fullest extent permitted by the DGCL, as so amended.

Section 2. The Corporation shall indemnify, to the fullest extent permitted by applicable law, any director or officer of the Corporation who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a "Proceeding") by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding. The Corporation shall be required to indemnify a person in connection with a Proceeding initiated by such person only if the Proceeding was authorized by the Board of Directors.

Section 3. The Corporation shall have the power to indemnify, to the extent permitted by applicable law, any employee or agent of the Corporation who was or is a party or is threatened to be made a party to any Proceeding by reason of the fact that he or she is or was a director, officer, employee or agent of the Corporation or is or was serving at the request of the Corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, including service with respect to employee benefit plans, against expenses (including attorneys' fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with any such Proceeding.

Section 4. Neither any amendment nor repeal of any Section of this Article IX, nor the adoption of any provision of this Amended and Restated Certificate of Incorporation or the Bylaws of the Corporation inconsistent with this Article IX, shall eliminate or reduce the effect of this Article IX in respect of any matter occurring, or any cause of action, suit, claim or proceeding accruing or arising or that, but for this Article IX, would accrue or arise, prior to such amendment, repeal or adoption of an inconsistent provision.

ARTICLE X

Meetings of stockholders may be held within or outside of the State of Delaware, as the Bylaws may provide. The books of the Corporation may be kept (subject to any provision contained in the statutes) outside of the State of Delaware at such place or places as may be designated from time to time by the Board of Directors or in the Bylaws of the Corporation.

ARTICLE XI

Unless the Corporation consents in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware shall be the sole and exclusive forum for (A) any derivative action or proceeding brought on behalf of the Corporation, (B) any action or proceeding asserting a claim of breach of a fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's stockholders, (C) any action or proceeding asserting a claim arising pursuant to any provision of the DGCL or the Corporation's Certificate of Incorporation or Bylaws, or (D) any action or proceeding asserting a claim governed by the internal affairs doctrine.

ARTICLE XII

The Corporation reserves the right to amend or repeal any provision contained in this Amended and Restated Certificate of Incorporation in the manner prescribed by the laws of the State of Delaware and all rights conferred upon stockholders are granted subject to this reservation; *provided, however*, that notwithstanding any other provision of this Amended and Restated Certificate of Incorporation or any provision of law that might otherwise permit a lesser vote or no vote, the Board of Directors acting pursuant to a resolution adopted by a majority of the Board of Directors and the affirmative vote of sixty-six and two-thirds percent (66 2/3%) of the then outstanding voting securities of the Corporation, voting together as a single class, shall be required for the amendment, repeal or modification of the provisions of Section 3 of Article IV, Section 2 of Article V, Article VI, Section 5 of Article VII, Article VIII, Article XI or Article XII of this Amended and Restated Certificate of Incorporation.

**AMENDED AND RESTATED BYLAWS OF
INOGEN, INC.**

(as amended and restated on October 11, 2013, and effective immediately prior to the
closing of the corporation's initial public offering)

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AMENDED AND RESTATED BYLAWS OF INOGEN, INC.

ARTICLE I — CORPORATE OFFICES

1.1 REGISTERED OFFICE

The registered office of Inogen, Inc. shall be fixed in the corporation's certificate of incorporation. References in these bylaws to the certificate of incorporation shall mean the certificate of incorporation of the corporation, as amended from time to time, including the terms of any certificate of designations of any series of Preferred Stock.

1.2 OTHER OFFICES

The corporation's board of directors may at any time establish other offices at any place or places where the corporation is qualified to do business.

ARTICLE II — MEETINGS OF STOCKHOLDERS

2.1 PLACE OF MEETINGS

Meetings of stockholders shall be held at any place, within or outside the State of Delaware, designated by the board of directors. The board of directors may, in its sole discretion, determine that a meeting of stockholders shall not be held at any place, but may instead be held solely by means of remote communication as authorized by Section 211(a)(2) of the General Corporation Law of the State of Delaware (the "DGCL"). In the absence of any such designation or determination, stockholders' meetings shall be held at the corporation's principal executive office.

2.2 ANNUAL MEETING

The annual meeting of stockholders shall be held on such date, at such time, and at such place (if any) within or without the State of Delaware as shall be designated from time to time by the board of directors and stated in the corporation's notice of the meeting. At the annual meeting, directors shall be elected and any other proper business may be transacted.

2.3 SPECIAL MEETING

(i) A special meeting of the stockholders, other than those required by statute, may be called at any time only by (A) the board of directors, (B) the chairperson of the board of directors, (C) the chief executive officer or (D) the president (in the absence of a chief executive officer). A special meeting of the stockholders may not be called by any other person or persons. The board of directors may cancel, postpone or reschedule any previously scheduled special meeting at any time, before or after the notice for such meeting has been sent to the stockholders.

(ii) The notice of a special meeting shall include the purpose for which the meeting is called. Only such business shall be conducted at a special meeting of stockholders as shall have been brought before the meeting by or at the direction of the board of directors, the chairperson of the board of directors, the chief executive officer or the president (in the absence of a chief executive officer). Nothing contained in this Section 2.3(ii) shall be construed as limiting, fixing or affecting the time when a meeting of stockholders called by action of the board of directors may be held.

2.4 ADVANCE NOTICE PROCEDURES

(i) *Advance Notice of Stockholder Business.* At an annual meeting of the stockholders, only such business shall be conducted as shall have been properly brought before the meeting. To be properly brought before an annual meeting, business must be brought: (A) pursuant to the corporation's proxy materials with respect to such meeting, (B) by or at the direction of the board of directors, or (C) by a stockholder of the corporation who (1) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(i) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has timely complied in proper written form with the notice procedures set forth in this Section 2.4(i). In addition, for business to be properly brought before an annual meeting by a stockholder, such business must be a proper matter for stockholder action pursuant to these bylaws and applicable law. Except for proposals properly made in accordance with Rule 14a-8 under the Securities and Exchange Act of 1934, and the rules and regulations thereunder (as so amended and inclusive of such rules and regulations), and included in the notice of meeting given by or at the direction of the board of directors, for the avoidance of doubt, clause (C) above shall be the exclusive means for a stockholder to bring business before an annual meeting of stockholders.

(a) To comply with clause (C) of Section 2.4(i) above, a stockholder's notice must set forth all information required under this Section 2.4(i) and must be timely received by the secretary of the corporation. To be timely, a stockholder's notice must be received by the secretary at the principal executive offices of the corporation not later than the 45th day nor earlier than the 75th day before the one-year anniversary of the date on which the corporation first mailed its proxy materials or a notice of availability of proxy materials (whichever is earlier) for the preceding year's annual meeting; *provided, however*, that in the event that no annual meeting was held in the previous year or if the date of the annual meeting is advanced by more than 30 days prior to or delayed by more than 60 days after the one-year anniversary of the date of the previous year's annual meeting, then, for notice by the stockholder to be timely, it must be so received by the secretary not earlier than the close of business on the 120th day prior to such annual meeting and not later than the close of business on the later of (i) the 90th day prior to such annual meeting, or (ii) the tenth day following the day on which Public Announcement (as defined below) of the date of such annual meeting is first made. In no event shall any adjournment or postponement of an annual meeting or the announcement thereof commence a new time period for the giving of a stockholder's notice as described in this Section 2.4(i)(a). "Public Announcement" shall mean disclosure in a press release reported by the Dow Jones News Service, Associated Press or a comparable national news service or in a document publicly filed by the corporation with the Securities and Exchange Commission pursuant to Section 13, 14 or 15(d) of the Securities Exchange Act of 1934, as amended, or any successor thereto (the "1934 Act").

(b) To be in proper written form, a stockholder's notice to the secretary must set forth as to each matter of business the stockholder intends to bring before the annual meeting: (1) a brief description of the business intended to be brought before the annual meeting and the reasons for conducting such business at the annual meeting, (2) the name and address, as they appear on the corporation's books, of the stockholder proposing such business and any Stockholder Associated Person (as defined below), (3) the

class and number of shares of the corporation that are held of record or are beneficially owned by the stockholder or any Stockholder Associated Person and any derivative positions held or beneficially held by the stockholder or any Stockholder Associated Person, (4) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit from share price changes for, or to increase or decrease the voting power of, such stockholder or any Stockholder Associated Person with respect to any securities of the corporation, (5) any material interest of the stockholder or a Stockholder Associated Person in such business, and (6) a statement whether either such stockholder or any Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of at least the percentage of the corporation's voting shares required under applicable law to carry the proposal (such information provided and statements made as required by clauses (1) through (6), a "Business Solicitation Statement"). In addition, to be in proper written form, a stockholder's notice to the secretary must be supplemented not later than ten days following the record date for notice of the meeting to disclose the information contained in clauses (3) and (4) above as of the record date for notice of the meeting. For purposes of this Section 2.4, a "Stockholder Associated Person" of any stockholder shall mean (i) any person controlling, directly or indirectly, or acting in concert with, such stockholder, (ii) any beneficial owner of shares of stock of the corporation owned of record or beneficially by such stockholder and on whose behalf the proposal or nomination, as the case may be, is being made, or (iii) any person controlling, controlled by or under common control with such person referred to in the preceding clauses (i) and (ii).

(c) Without exception, no business shall be conducted at any annual meeting except in accordance with the provisions set forth in this Section 2.4(i) and, if applicable, Section 2.4(ii). In addition, business proposed to be brought by a stockholder may not be brought before the annual meeting if such stockholder or a Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Business Solicitation Statement applicable to such business or if the Business Solicitation Statement applicable to such business contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that business was not properly brought before the annual meeting and in accordance with the provisions of this Section 2.4(i), and, if the chairperson should so determine, he or she shall so declare at the annual meeting that any such business not properly brought before the annual meeting shall not be conducted.

(ii) *Advance Notice of Director Nominations at Annual Meetings.* Notwithstanding anything in these bylaws to the contrary, only persons who are nominated in accordance with the procedures set forth in this Section 2.4(ii) shall be eligible for election or re-election as directors at an annual meeting of stockholders. Nominations of persons for election or re-election to the board of directors of the corporation shall be made at an annual meeting of stockholders only (A) by or at the direction of the board of directors or (B) by a stockholder of the corporation who (1) was a stockholder of record at the time of the giving of the notice required by this Section 2.4(ii) and on the record date for the determination of stockholders entitled to vote at the annual meeting and (2) has complied with the notice procedures set forth in this Section 2.4(ii). In addition to any other applicable requirements, for a nomination to be made by a stockholder, the stockholder must have given timely notice thereof in proper written form to the secretary of the corporation.

(a) To comply with clause (B) of Section 2.4(ii) above, a nomination to be made by a stockholder must set forth all information required under this Section 2.4(ii) and must be received by the

secretary of the corporation at the principal executive offices of the corporation at the time set forth in, and in accordance with, the final three sentences of Section 2.4(i)(a) above.

(b) To be in proper written form, such stockholder's notice to the secretary must set forth:

(1) as to each person (a "nominee") whom the stockholder proposes to nominate for election or re-election as a director: (A) the name, age, business address and residence address of the nominee, (B) the principal occupation or employment of the nominee, (C) the class and number of shares of the corporation that are held of record or are beneficially owned by the nominee and any derivative positions held or beneficially held by the nominee, (D) whether and the extent to which any hedging or other transaction or series of transactions has been entered into by or on behalf of the nominee with respect to any securities of the corporation, and a description of any other agreement, arrangement or understanding (including any short position or any borrowing or lending of shares), the effect or intent of which is to mitigate loss to, or to manage the risk or benefit of share price changes for, or to increase or decrease the voting power of the nominee, (E) a description of all arrangements or understandings between the stockholder and each nominee and any other person or persons (naming such person or persons) pursuant to which the nominations are to be made by the stockholder, (F) a written statement executed by the nominee acknowledging that as a director of the corporation, the nominee will owe a fiduciary duty under Delaware law with respect to the corporation and its stockholders, and (G) any other information relating to the nominee that would be required to be disclosed about such nominee if proxies were being solicited for the election or re-election of the nominee as a director, or that is otherwise required, in each case pursuant to Regulation 14A under the 1934 Act (including without limitation the nominee's written consent to being named in the proxy statement, if any, as a nominee and to serving as a director if elected or re-elected, as the case may be); and

(2) as to such stockholder giving notice, (A) the information required to be provided pursuant to clauses (2) through (5) of Section 2.4(i)(b) above, and the supplement referenced in the second sentence of Section 2.4(i)(b) above (except that the references to "business" in such clauses shall instead refer to nominations of directors for purposes of this paragraph), and (B) a statement whether either such stockholder or Stockholder Associated Person will deliver a proxy statement and form of proxy to holders of a number of the corporation's voting shares reasonably believed by such stockholder or Stockholder Associated Person to be necessary to elect or re-elect such nominee(s) (such information provided and statements made as required by clauses (A) and (B) above, a "Nominee Solicitation Statement").

(c) At the request of the board of directors, any person nominated by a stockholder for election or re-election as a director must furnish to the secretary of the corporation (1) that information required to be set forth in the stockholder's notice of nomination of such person as a director as of a date subsequent to the date on which the notice of such person's nomination was given and (2) such other information as may reasonably be required by the corporation to determine the eligibility of such proposed nominee to serve as an independent director or audit committee financial expert of the corporation under applicable law, securities exchange rule or regulation, or any publicly-disclosed corporate governance guideline or committee charter of the corporation and (3) that could be material to a reasonable stockholder's understanding of the independence, or lack thereof, of such nominee; in the absence of the furnishing of such information if requested, such stockholder's nomination shall not be considered in proper form pursuant to this Section 2.4(ii).

(d) Without exception, no person shall be eligible for election or re-election as a director of the corporation at an annual meeting of stockholders unless nominated in accordance with the provisions set forth in this Section 2.4(ii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading. The chairperson of the annual meeting shall, if the facts warrant, determine and declare at the annual meeting that a nomination was not made in accordance with the provisions prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the annual meeting, and the defective nomination shall be disregarded.

(iii) *Advance Notice of Director Nominations for Special Meetings.*

(a) For a special meeting of stockholders at which directors are to be elected or re-elected, nominations of persons for election or re-election to the board of directors shall be made only (1) by or at the direction of the board of directors or (2) by any stockholder of the corporation who (A) is a stockholder of record at the time of the giving of the notice required by this Section 2.4(iii) and on the record date for the determination of stockholders entitled to vote at the special meeting and (B) delivers a timely written notice of the nomination to the secretary of the corporation that includes the information set forth in Sections 2.4(ii)(b) and (ii)(c) above. To be timely, such notice must be received by the secretary at the principal executive offices of the corporation not later than the close of business on the later of the 90th day prior to such special meeting or the tenth day following the day on which Public Announcement is first made of the date of the special meeting and of the nominees proposed by the board of directors to be elected or re-elected at such meeting. A person shall not be eligible for election or re-election as a director at a special meeting unless the person is nominated (i) by or at the direction of the board of directors or (ii) by a stockholder in accordance with the notice procedures set forth in this Section 2.4(iii). In addition, a nominee shall not be eligible for election or re-election if a stockholder or Stockholder Associated Person, as applicable, takes action contrary to the representations made in the Nominee Solicitation Statement applicable to such nominee or if the Nominee Solicitation Statement applicable to such nominee contains an untrue statement of a material fact or omits to state a material fact necessary to make the statements therein not misleading.

(b) The chairperson of the special meeting shall, if the facts warrant, determine and declare at the meeting that a nomination or business was not made in accordance with the procedures prescribed by these bylaws, and if the chairperson should so determine, he or she shall so declare at the meeting, and the defective nomination or business shall be disregarded.

(iv) *Other Requirements and Rights.* In addition to the foregoing provisions of this Section 2.4, a stockholder must also comply with all applicable requirements of state law and of the 1934 Act and the rules and regulations thereunder with respect to the matters set forth in this Section 2.4. Nothing in this Section 2.4 shall be deemed to affect any rights of:

(a) a stockholder to request inclusion of proposals in the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act; or

(b) the corporation to omit a proposal from the corporation's proxy statement pursuant to Rule 14a-8 (or any successor provision) under the 1934 Act.

2.5 NOTICE OF STOCKHOLDERS' MEETINGS

Whenever stockholders are required or permitted to take any action at a meeting, a written notice of the meeting shall be given which shall state the place, if any, date and hour of the meeting, the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such meeting, the record date for determining the stockholders entitled to vote at the meeting, if such date is different from the record date for determining stockholders entitled to notice of the meeting, and, in the case of a special meeting, the purpose or purposes for which the meeting is called. Except as otherwise provided in the DGCL, the certificate of incorporation or these bylaws, the written notice of any meeting of stockholders shall be given not less than 10 nor more than 60 days before the date of the meeting to each stockholder entitled to vote at such meeting as of the record date for determining the stockholders entitled to notice of the meeting.

2.6 QUORUM

The holders of a majority of the stock issued and outstanding and entitled to vote, present in person or represented by proxy, shall constitute a quorum for the transaction of business at all meetings of the stockholders. Where a separate vote by a class or series or classes or series is required, a majority of the outstanding shares of such class or series or classes or series, present in person or represented by proxy, shall constitute a quorum entitled to take action with respect to that vote on that matter, except as otherwise provided by law, the certificate of incorporation or these bylaws

If a quorum is not present or represented at any meeting of the stockholders, then either (i) the chairperson of the meeting, or (ii) the stockholders entitled to vote at the meeting, present in person or represented by proxy, shall have power to adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present or represented. At such adjourned meeting at which a quorum is present or represented, any business may be transacted that might have been transacted at the meeting as originally noticed.

2.7 ADJOURNED MEETING; NOTICE

When a meeting is adjourned to another time or place, unless these bylaws otherwise require, notice need not be given of the adjourned meeting if the time, place, if any, thereof, and the means of remote communications, if any, by which stockholders and proxy holders may be deemed to be present in person and vote at such adjourned meeting are announced at the meeting at which the adjournment is taken. At the adjourned meeting, the corporation may transact any business which might have been transacted at the original meeting. If the adjournment is for more than 30 days, a notice of the adjourned meeting shall be given to each stockholder of record entitled to vote at the meeting. If after the adjournment a new record date for stockholders entitled to vote is fixed for the adjourned meeting, the board of directors shall fix a new record date for notice of such adjourned meeting in accordance with Section 213(a) of the DGCL and Section 2.11 of these bylaws, and shall give notice of the adjourned meeting to each stockholder of record entitled to vote at such adjourned meeting as of the record date fixed for notice of such adjourned meeting.

2.8 CONDUCT OF BUSINESS

The chairperson of any meeting of stockholders shall determine the order of business and the procedure at the meeting, including such regulation of the manner of voting and the conduct of business. The chairperson of any meeting of stockholders shall be designated by the board of directors; in the absence of such designation,

the chairperson of the board, if any, the chief executive officer (in the absence of the chairperson) or the president (in the absence of the chairperson of the board and the chief executive officer), or in their absence any other executive officer of the corporation, shall serve as chairperson of the stockholder meeting.

2.9 VOTING

The stockholders entitled to vote at any meeting of stockholders shall be determined in accordance with the provisions of Section 2.11 of these bylaws, subject to Section 217 (relating to voting rights of fiduciaries, pledgors and joint owners of stock) and Section 218 (relating to voting trusts and other voting agreements) of the DGCL.

Except as may be otherwise provided in the certificate of incorporation or these bylaws, each stockholder shall be entitled to one vote for each share of capital stock held by such stockholder.

Except as otherwise required by law, the certificate of incorporation or these bylaws, in all matters other than the election of directors, the affirmative vote of a majority of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the subject matter shall be the act of the stockholders. Except as otherwise required by law, the certificate of incorporation or these bylaws, directors shall be elected by a plurality of the voting power of the shares present in person or represented by proxy at the meeting and entitled to vote on the election of directors. Where a separate vote by a class or series or classes or series is required, in all matters other than the election of directors, the affirmative vote of the majority of shares of such class or series or classes or series present in person or represented by proxy at the meeting shall be the act of such class or series or classes or series, except as otherwise provided by law, the certificate of incorporation or these bylaws.

2.10 STOCKHOLDER ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Subject to the rights of the holders of the shares of any series of Preferred Stock or any other class of stock or series thereof that have been expressly granted the right to take action by written consent, any action required or permitted to be taken by the stockholders of the corporation must be effected at a duly called annual or special meeting of stockholders of the corporation and may not be effected by any consent in writing by such stockholders.

2.11 RECORD DATES

In order that the corporation may determine the stockholders entitled to notice of any meeting of stockholders or any adjournment thereof, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted by the board of directors and which record date shall not be more than 60 nor less than 10 days before the date of such meeting. If the board of directors so fixes a date, such date shall also be the record date for determining the stockholders entitled to vote at such meeting unless the board of directors determines, at the time it fixes such record date, that a later date on or before the date of the meeting shall be the date for making such determination.

If no record date is fixed by the board of directors, the record date for determining stockholders entitled to notice of and to vote at a meeting of stockholders shall be at the close of business on the day next preceding the day on which notice is given, or, if notice is waived, at the close of business on the day next preceding the day on which the meeting is held.

A determination of stockholders of record entitled to notice of or to vote at a meeting of stockholders shall apply to any adjournment of the meeting; *provided, however*, that the board of directors may fix a new

record date for determination of stockholders entitled to vote at the adjourned meeting, and in such case shall also fix as the record date for stockholders entitled to notice of such adjourned meeting the same or an earlier date as that fixed for determination of stockholders entitled to vote in accordance with the provisions of Section 213 of the DGCL and this Section 2.11 at the adjourned meeting.

In order that the corporation may determine the stockholders entitled to receive payment of any dividend or other distribution or allotment of any rights or the stockholders entitled to exercise any rights in respect of any change, conversion or exchange of stock, or for the purpose of any other lawful action, the board of directors may fix a record date, which record date shall not precede the date upon which the resolution fixing the record date is adopted, and which record date shall be not more than 60 days prior to such action. If no record date is fixed, the record date for determining stockholders for any such purpose shall be at the close of business on the day on which the board of directors adopts the resolution relating thereto.

2.12 PROXIES

Each stockholder entitled to vote at a meeting of stockholders may authorize another person or persons to act for such stockholder by proxy authorized by an instrument in writing or by a transmission permitted by law filed in accordance with the procedure established for the meeting, but no such proxy shall be voted or acted upon after three years from its date, unless the proxy provides for a longer period. The revocability of a proxy that states on its face that it is irrevocable shall be governed by the provisions of Section 212 of the DGCL. A written proxy may be in the form of a telegram, cablegram, or other means of electronic transmission which sets forth or is submitted with information from which it can be determined that the telegram, cablegram, or other means of electronic transmission was authorized by the person.

2.13 LIST OF STOCKHOLDERS ENTITLED TO VOTE

The officer who has charge of the stock ledger of the corporation shall prepare and make, at least 10 days before every meeting of stockholders, a complete list of the stockholders entitled to vote at the meeting; *provided, however*, if the record date for determining the stockholders entitled to vote is less than 10 days before the meeting date, the list shall reflect the stockholders entitled to vote as of the tenth day before the meeting date. The stockholder list shall be arranged in alphabetical order and show the address of each stockholder and the number of shares registered in the name of each stockholder. The corporation shall not be required to include electronic mail addresses or other electronic contact information on such list. Such list shall be open to the examination of any stockholder for any purpose germane to the meeting for a period of at least 10 days prior to the meeting (i) on a reasonably accessible electronic network, provided that the information required to gain access to such list is provided with the notice of the meeting, or (ii) during ordinary business hours, at the corporation's principal place of business. In the event that the corporation determines to make the list available on an electronic network, the corporation may take reasonable steps to ensure that such information is available only to stockholders of the corporation. If the meeting is to be held at a place, then the list shall be produced and kept at the time and place of the meeting during the whole time thereof, and may be examined by any stockholder who is present. If the meeting is to be held solely by means of remote communication, then the list shall also be open to the examination of any stockholder during the whole time of the meeting on a reasonably accessible electronic network, and the information required to access such list shall be provided with the notice of the meeting. Such list shall presumptively determine the identity of the stockholders entitled to vote at the meeting and the number of shares held by each of them.

2.14 INSPECTORS OF ELECTION

Before any meeting of stockholders, the board of directors shall appoint an inspector or inspectors of election to act at the meeting or its adjournment. The number of inspectors shall be either one (1) or three (3). If any person appointed as inspector fails to appear or fails or refuses to act, then the chairperson of the meeting may, and upon the request of any stockholder or a stockholder's proxy shall, appoint a person to fill that vacancy.

Each inspector, before entering upon the discharge of his or her duties, shall take and sign an oath to execute faithfully the duties of inspector with strict impartiality and according to the best of his or her ability. The inspector or inspectors so appointed and designated shall (i) ascertain the number of shares of capital stock of the corporation outstanding and the voting power of each share, (ii) determine the shares of capital stock of the corporation represented at the meeting and the validity of proxies and ballots, (iii) count all votes and ballots, (iv) determine and retain for a reasonable period a record of the disposition of any challenges made to any determination by the inspectors, and (v) certify their determination of the number of shares of capital stock of the corporation represented at the meeting and such inspector or inspectors' count of all votes and ballots.

In determining the validity and counting of proxies and ballots cast at any meeting of stockholders of the corporation, the inspector or inspectors may consider such information as is permitted by applicable law. If there are three (3) inspectors of election, the decision, act or certificate of a majority is effective in all respects as the decision, act or certificate of all.

ARTICLE III — DIRECTORS

3.1 POWERS

The business and affairs of the corporation shall be managed by or under the direction of the board of directors, except as may be otherwise provided in the DGCL or the certificate of incorporation.

3.2 NUMBER OF DIRECTORS

The board of directors shall consist of one or more members, each of whom shall be a natural person. Unless the certificate of incorporation fixes the number of directors, the number of directors shall be determined from time to time solely by resolution of the board of directors. No reduction of the authorized number of directors shall have the effect of removing any director before that director's term of office expires.

3.3 ELECTION, QUALIFICATION AND TERM OF OFFICE OF DIRECTORS

Except as provided in Section 3.4 of these bylaws, each director, including a director elected to fill a vacancy, shall hold office until the expiration of the term for which elected and until such director's successor is elected and qualified or until such director's earlier death, resignation or removal. Directors need not be stockholders unless so required by the certificate of incorporation or these bylaws. The certificate of incorporation or these bylaws may prescribe other qualifications for directors.

3.4 RESIGNATION AND VACANCIES

Any director may resign at any time upon notice given in writing or by electronic transmission to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic

transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the director. A resignation is effective when the resignation is delivered unless the resignation specifies a later effective date or an effective date determined upon the happening of an event or events. Acceptance of such resignation shall not be necessary to make it effective. A resignation which is conditioned upon the director failing to receive a specified vote for reelection as a director may provide that it is irrevocable. Unless otherwise provided in the certificate of incorporation or these bylaws, when one or more directors resign from the board of directors, effective at a future date, a majority of the directors then in office, including those who have so resigned, shall have power to fill such vacancy or vacancies, the vote thereon to take effect when such resignation or resignations shall become effective.

Unless otherwise provided in the certificate of incorporation or these bylaws, vacancies and newly created directorships resulting from any increase in the authorized number of directors elected by all of the stockholders having the right to vote as a single class shall be filled only by a majority of the directors then in office, although less than a quorum, or by a sole remaining director. If the directors are divided into classes, a person so elected by the directors then in office to fill a vacancy or newly created directorship shall hold office until the next election of the class for which such director shall have been chosen and until his or her successor shall have been duly elected and qualified.

If, at the time of filling any vacancy or any newly created directorship, the directors then in office constitute less than a majority of the whole board of directors (as constituted immediately prior to any such increase), the Court of Chancery may, upon application of any stockholder or stockholders holding at least 10% of the voting stock at the time outstanding having the right to vote for such directors, summarily order an election to be held to fill any such vacancies or newly created directorships, or to replace the directors chosen by the directors then in office as aforesaid, which election shall be governed by the provisions of Section 211 of the DGCL as far as applicable.

3.5 PLACE OF MEETINGS; MEETINGS BY TELEPHONE

The board of directors may hold meetings, both regular and special, either within or outside the State of Delaware.

Unless otherwise restricted by the certificate of incorporation or these bylaws, members of the board of directors, or any committee designated by the board of directors, may participate in a meeting of the board of directors, or any committee, by means of conference telephone or other communications equipment by means of which all persons participating in the meeting can hear each other, and such participation in a meeting shall constitute presence in person at the meeting.

3.6 REGULAR MEETINGS

Regular meetings of the board of directors may be held without notice at such time and at such place as shall from time to time be determined by the board of directors.

3.7 SPECIAL MEETINGS; NOTICE

Special meetings of the board of directors for any purpose or purposes may be called at any time by the chairperson of the board of directors, the chief executive officer, the president, the secretary or a majority of the authorized number of directors, at such times and places as he or she or they shall designate.

Notice of the time and place of special meetings shall be:

- (i) delivered personally by hand, by courier or by telephone;
- (ii) sent by United States first-class mail, postage prepaid;
- (iii) sent by facsimile; or
- (iv) sent by electronic mail,

directed to each director at that director's address, telephone number, facsimile number or electronic mail address, as the case may be, as shown on the corporation's records.

If the notice is (i) delivered personally by hand, by courier or by telephone, (ii) sent by facsimile or (iii) sent by electronic mail, it shall be delivered or sent at least 24 hours before the time of the holding of the meeting. If the notice is sent by United States mail, it shall be deposited in the United States mail at least four days before the time of the holding of the meeting. Any oral notice may be communicated to the director. The notice need not specify the place of the meeting (if the meeting is to be held at the corporation's principal executive office) nor the purpose of the meeting.

3.8 QUORUM; VOTING

At all meetings of the board of directors, a majority of the total authorized number of directors shall constitute a quorum for the transaction of business. If a quorum is not present at any meeting of the board of directors, then the directors present thereat may adjourn the meeting from time to time, without notice other than announcement at the meeting, until a quorum is present. A meeting at which a quorum is initially present may continue to transact business notwithstanding the withdrawal of directors, if any action taken is approved by at least a majority of the required quorum for that meeting.

The vote of a majority of the directors present at any meeting at which a quorum is present shall be the act of the board of directors, except as may be otherwise specifically provided by statute, the certificate of incorporation or these bylaws.

If the certificate of incorporation provides that one or more directors shall have more or less than one vote per director on any matter, every reference in these bylaws to a majority or other proportion of the directors shall refer to a majority or other proportion of the votes of the directors.

3.9 BOARD ACTION BY WRITTEN CONSENT WITHOUT A MEETING

Unless otherwise restricted by the certificate of incorporation or these bylaws, any action required or permitted to be taken at any meeting of the board of directors, or of any committee thereof, may be taken without a meeting if all members of the board of directors or committee, as the case may be, consent thereto in writing or by electronic transmission and the writing or writings or electronic transmission or transmissions are filed with the minutes of proceedings of the board of directors or committee. Such filing shall be in paper form if the minutes are maintained in paper form and shall be in electronic form if the minutes are maintained in electronic form.

3.10 FEES AND COMPENSATION OF DIRECTORS

Unless otherwise restricted by the certificate of incorporation or these bylaws, the board of directors shall have the authority to fix the compensation of directors.

3.11 REMOVAL OF DIRECTORS

A director may be removed from office by the stockholders of the corporation only for cause.

No reduction of the authorized number of directors shall have the effect of removing any director prior to the expiration of such director's term of office.

ARTICLE IV — COMMITTEES

4.1 COMMITTEES OF DIRECTORS

The board of directors may designate one or more committees, each committee to consist of one or more of the directors of the corporation. The board of directors may designate one or more directors as alternate members of any committee, who may replace any absent or disqualified member at any meeting of the committee. In the absence or disqualification of a member of a committee, the member or members thereof present at any meeting and not disqualified from voting, whether or not such member or members constitute a quorum, may unanimously appoint another member of the board of directors to act at the meeting in the place of any such absent or disqualified member. Any such committee, to the extent provided in the resolution of the board of directors or in these bylaws, shall have and may exercise all the powers and authority of the board of directors in the management of the business and affairs of the corporation, and may authorize the seal of the corporation to be affixed to all papers that may require it; but no such committee shall have the power or authority to (i) approve or adopt, or recommend to the stockholders, any action or matter (other than the election or removal of directors) expressly required by the DGCL to be submitted to stockholders for approval, or (ii) adopt, amend or repeal any bylaw of the corporation.

4.2 COMMITTEE MINUTES

Each committee shall keep regular minutes of its meetings and report the same to the board of directors when required.

4.3 MEETINGS AND ACTION OF COMMITTEES

Meetings and actions of committees shall be governed by, and held and taken in accordance with, the provisions of:

- (i) Section 3.5 (place of meetings and meetings by telephone);
- (ii) Section 3.6 (regular meetings);
- (iii) Section 3.7 (special meetings; notice);
- (iv) Section 3.8 (quorum; voting);

(v) Section 3.9 (action without a meeting); and

(vi) Section 7.5 (waiver of notice)

with such changes in the context of those bylaws as are necessary to substitute the committee and its members for the board of directors and its members.
However:

(i) the time of regular meetings of committees may be determined by resolution of the committee;

(ii) special meetings of committees may also be called by resolution of the committee; and

(iii) notice of special meetings of committees shall also be given to all alternate members, who shall have the right to attend all meetings of the committee. The board of directors may adopt rules for the government of any committee not inconsistent with the provisions of these bylaws.

Any provision in the certificate of incorporation providing that one or more directors shall have more or less than one vote per director on any matter shall apply to voting in any committee or subcommittee, unless otherwise provided in the certificate of incorporation or these bylaws.

4.4 SUBCOMMITTEES

Unless otherwise provided in the certificate of incorporation, these bylaws or the resolutions of the board of directors designating the committee, a committee may create one or more subcommittees, each subcommittee to consist of one or more members of the committee, and delegate to a subcommittee any or all of the powers and authority of the committee.

ARTICLE V — OFFICERS

5.1 OFFICERS

The officers of the corporation shall be a president and a secretary. The corporation may also have, at the discretion of the board of directors, a chairperson of the board of directors, a vice chairperson of the board of directors, a chief executive officer, a chief financial officer or treasurer, one or more vice presidents, one or more assistant vice presidents, one or more assistant treasurers, one or more assistant secretaries, and any such other officers as may be appointed in accordance with the provisions of these bylaws. Any number of offices may be held by the same person.

5.2 APPOINTMENT OF OFFICERS

The board of directors shall appoint the officers of the corporation, except such officers as may be appointed in accordance with the provisions of Section 5.3 of these bylaws, subject to the rights, if any, of an officer under any contract of employment. A vacancy in any office because of death, resignation, removal, disqualification or any other cause shall be filled in the manner prescribed in this Section 5 for the regular election to such office.

5.3 SUBORDINATE OFFICERS

The board of directors may appoint, or empower the chief executive officer or, in the absence of a chief executive officer, the president, to appoint, such other officers and agents as the business of the corporation may require. Each of such officers and agents shall hold office for such period, have such authority, and perform such duties as are provided in these bylaws or as the board of directors may from time to time determine.

5.4 REMOVAL AND RESIGNATION OF OFFICERS

Subject to the rights, if any, of an officer under any contract of employment, any officer may be removed, either with or without cause, by an affirmative vote of the majority of the board of directors at any regular or special meeting of the board of directors or, except in the case of an officer chosen by the board of directors, by any officer upon whom such power of removal may be conferred by the board of directors.

Any officer may resign at any time by giving written or electronic notice to the corporation; *provided, however*, that if such notice is given by electronic transmission, such electronic transmission must either set forth or be submitted with information from which it can be determined that the electronic transmission was authorized by the officer. Any resignation shall take effect at the date of the receipt of that notice or at any later time specified in that notice. Unless otherwise specified in the notice of resignation, the acceptance of the resignation shall not be necessary to make it effective. Any resignation is without prejudice to the rights, if any, of the corporation under any contract to which the officer is a party.

5.5 VACANCIES IN OFFICES

Any vacancy occurring in any office of the corporation shall be filled by the board of directors or as provided in Section 5.3.

5.6 REPRESENTATION OF SHARES OF OTHER CORPORATIONS

The chairperson of the board of directors, the president, any vice president, the treasurer, the secretary or assistant secretary of this corporation, or any other person authorized by the board of directors or the president or a vice president, is authorized to vote, represent, and exercise on behalf of this corporation all rights incident to any and all shares of any other corporation or corporations standing in the name of this corporation. The authority granted herein may be exercised either by such person directly or by any other person authorized to do so by proxy or power of attorney duly executed by such person having the authority.

5.7 AUTHORITY AND DUTIES OF OFFICERS

All officers of the corporation shall respectively have such authority and perform such duties in the management of the business of the corporation as may be designated from time to time by the board of directors and, to the extent not so provided, as generally pertain to their respective offices, subject to the control of the board of directors.

5.8 THE CHAIRPERSON OF THE BOARD

The chairperson of the board shall have the powers and duties customarily and usually associated with the office of the chairperson of the board. The chairperson of the board shall preside at meetings of the stockholders and of the board of directors.

5.9 THE VICE CHAIRPERSON OF THE BOARD

The vice chairperson of the board shall have the powers and duties customarily and usually associated with the office of the vice chairperson of the board. In the case of absence or disability of the chairperson of the board, the vice chairperson of the board shall perform the duties and exercise the powers of the chairperson of the board.

5.10 THE CHIEF EXECUTIVE OFFICER

The chief executive officer shall have, subject to the supervision, direction and control of the board of directors, ultimate authority for decisions relating to the supervision, direction and management of the affairs and the business of the corporation customarily and usually associated with the position of chief executive officer, including, without limitation, all powers necessary to direct and control the organizational and reporting relationships within the corporation. If at any time the office of the chairperson and vice chairperson of the board shall not be filled, or in the event of the temporary absence or disability of the chairperson of the board and the vice chairperson of the board, the chief executive officer shall perform the duties and exercise the powers of the chairperson of the board unless otherwise determined by the board of directors.

5.11 THE PRESIDENT

The president shall have, subject to the supervision, direction and control of the board of directors, the general powers and duties of supervision, direction and management of the affairs and business of the corporation customarily and usually associated with the position of president. The president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board or the chief executive officer. In the event of the absence or disability of the chief executive officer, the president shall perform the duties and exercise the powers of the chief executive officer unless otherwise determined by the board of directors.

5.12 THE VICE PRESIDENTS AND ASSISTANT VICE PRESIDENTS

Each vice president and assistant vice president shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer or the president.

5.13 THE SECRETARY AND ASSISTANT SECRETARIES

(i) The secretary shall attend meetings of the board of directors and meetings of the stockholders and record all votes and minutes of all such proceedings in a book or books kept for such purpose. The secretary shall have all such further powers and duties as are customarily and usually associated with the position of secretary or as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer or the president.

(ii) Each assistant secretary shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chairperson of the board, the chief executive officer, the president or the secretary. In the event of the absence, inability or refusal to act of the secretary, the assistant secretary (or if there shall be more than one, the assistant secretaries in the order determined by the board of directors) shall perform the duties and exercise the powers of the secretary.

5.14 THE CHIEF FINANCIAL OFFICER AND ASSISTANT TREASURERS

(i) The chief financial officer shall be the treasurer of the corporation. The chief financial officer shall have custody of the corporation's funds and securities, shall be responsible for maintaining the corporation's accounting records and statements, shall keep full and accurate accounts of receipts and disbursements in books belonging to the corporation, and shall deposit or cause to be deposited moneys or other valuable effects in the name and to the credit of the corporation in such depositories as may be designated by the board of directors. The chief financial officer shall also maintain adequate records of all assets, liabilities and transactions of the corporation and shall assure that adequate audits thereof are currently and regularly made. The chief financial officer shall have all such further powers and duties as are customarily and usually associated with the position of chief financial officer, or as may from time to time be assigned to him or her by the board of directors, the chairperson, the chief executive officer or the president.

(ii) Each assistant treasurer shall have such powers and perform such duties as may from time to time be assigned to him or her by the board of directors, the chief executive officer, the president or the chief financial officer. In the event of the absence, inability or refusal to act of the chief financial officer, the assistant treasurer (or if there shall be more than one, the assistant treasurers in the order determined by the board of directors) shall perform the duties and exercise the powers of the chief financial officer.

ARTICLE VI — STOCK

6.1 STOCK CERTIFICATES; PARTLY PAID SHARES

The shares of the corporation shall be represented by certificates, provided that the board of directors may provide by resolution or resolutions that some or all of any or all classes or series of its stock shall be uncertificated shares. Any such resolution shall not apply to shares represented by a certificate until such certificate is surrendered to the corporation. Every holder of stock represented by certificates shall be entitled to have a certificate signed by, or in the name of the corporation by the chairperson of the board of directors or vice-chairperson of the board of directors, or the president or a vice-president, and by the treasurer or an assistant treasurer, or the secretary or an assistant secretary of the corporation representing the number of shares registered in certificate form. Any or all of the signatures on the certificate may be a facsimile. In case any officer, transfer agent or registrar who has signed or whose facsimile signature has been placed upon a certificate has ceased to be such officer, transfer agent or registrar before such certificate is issued, it may be issued by the corporation with the same effect as if such person were such officer, transfer agent or registrar at the date of issue. The corporation shall not have power to issue a certificate in bearer form.

The corporation may issue the whole or any part of its shares as partly paid and subject to call for the remainder of the consideration to be paid therefor. Upon the face or back of each stock certificate issued to represent any such partly-paid shares, or upon the books and records of the corporation in the case of uncertificated partly-paid shares, the total amount of the consideration to be paid therefor and the amount paid

thereon shall be stated. Upon the declaration of any dividend on fully-paid shares, the corporation shall declare a dividend upon partly-paid shares of the same class, but only upon the basis of the percentage of the consideration actually paid thereon.

6.2 SPECIAL DESIGNATION ON CERTIFICATES

If the corporation is authorized to issue more than one class of stock or more than one series of any class, then the powers, the designations, the preferences, and the relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights shall be set forth in full or summarized on the face or back of the certificate that the corporation shall issue to represent such class or series of stock; *provided, however*, that, except as otherwise provided in Section 202 of the DGCL, in lieu of the foregoing requirements there may be set forth on the face or back of the certificate that the corporation shall issue to represent such class or series of stock, a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Within a reasonable time after the issuance or transfer of uncertificated stock, the corporation shall send to the registered owner thereof a written notice containing the information required to be set forth or stated on certificates pursuant to this section 6.2 or Sections 156, 202(a) or 218(a) of the DGCL or with respect to this section 6.2 a statement that the corporation will furnish without charge to each stockholder who so requests the powers, designations, preferences and relative, participating, optional or other special rights of each class of stock or series thereof and the qualifications, limitations or restrictions of such preferences and/or rights. Except as otherwise expressly provided by law, the rights and obligations of the holders of uncertificated stock and the rights and obligations of the holders of certificates representing stock of the same class and series shall be identical.

6.3 LOST, STOLEN OR DESTROYED CERTIFICATES

Except as provided in this Section 6.3, no new certificates for shares shall be issued to replace a previously issued certificate unless the latter is surrendered to the corporation and cancelled at the same time. The corporation may issue a new certificate of stock or uncertificated shares in the place of any certificate theretofore issued by it, alleged to have been lost, stolen or destroyed, and the corporation may require the owner of the lost, stolen or destroyed certificate, or such owner's legal representative, to give the corporation a bond sufficient to indemnify it against any claim that may be made against it on account of the alleged loss, theft or destruction of any such certificate or the issuance of such new certificate or uncertificated shares.

6.4 DIVIDENDS

The board of directors, subject to any restrictions contained in the certificate of incorporation or applicable law, may declare and pay dividends upon the shares of the corporation's capital stock. Dividends may be paid in cash, in property, or in shares of the corporation's capital stock, subject to the provisions of the certificate of incorporation.

The board of directors may set apart out of any of the funds of the corporation available for dividends a reserve or reserves for any proper purpose and may abolish any such reserve. Such purposes shall include but not be limited to equalizing dividends, repairing or maintaining any property of the corporation, and meeting contingencies.

6.5 TRANSFER OF STOCK

Transfers of record of shares of stock of the corporation shall be made only upon its books by the holders thereof, in person or by an attorney duly authorized, and, if such stock is certificated, upon the surrender of a certificate or certificates for a like number of shares, properly endorsed or accompanied by proper evidence of succession, assignation or authority to transfer; *provided, however*, that such succession, assignment or authority to transfer is not prohibited by the certificate of incorporation, these bylaws, applicable law or contract.

6.6 STOCK TRANSFER AGREEMENTS

The corporation shall have power to enter into and perform any agreement with any number of stockholders of any one or more classes of stock of the corporation to restrict the transfer of shares of stock of the corporation of any one or more classes owned by such stockholders in any manner not prohibited by the DGCL.

6.7 REGISTERED STOCKHOLDERS

The corporation:

- (i) shall be entitled to recognize the exclusive right of a person registered on its books as the owner of shares to receive dividends and to vote as such owner;
 - (ii) shall be entitled to hold liable for calls and assessments the person registered on its books as the owner of shares;
- and
- (iii) shall not be bound to recognize any equitable or other claim to or interest in such share or shares on the part of another person, whether or not it shall have express or other notice thereof, except as otherwise provided by the laws of Delaware.

ARTICLE VII — MANNER OF GIVING NOTICE AND WAIVER

7.1 NOTICE OF STOCKHOLDERS' MEETINGS

Notice of any meeting of stockholders, if mailed, is given when deposited in the United States mail, postage prepaid, directed to the stockholder at such stockholder's address as it appears on the corporation's records. An affidavit of the secretary or an assistant secretary of the corporation or of the transfer agent or other agent of the corporation that the notice has been given shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

7.2 NOTICE BY ELECTRONIC TRANSMISSION

Without limiting the manner by which notice otherwise may be given effectively to stockholders pursuant to the DGCL, the certificate of incorporation or these bylaws, any notice to stockholders given by the corporation under any provision of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a form of electronic transmission consented to by the stockholder to whom the notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any such consent shall be deemed revoked if:

(i) the corporation is unable to deliver by electronic transmission two consecutive notices given by the corporation in accordance with such consent; and

(ii) such inability becomes known to the secretary or an assistant secretary of the corporation or to the transfer agent, or other person responsible for the giving of notice.

However, the inadvertent failure to treat such inability as a revocation shall not invalidate any meeting or other action.

Any notice given pursuant to the preceding paragraph shall be deemed given:

- (i) if by facsimile telecommunication, when directed to a number at which the stockholder has consented to receive notice;
- (ii) if by electronic mail, when directed to an electronic mail address at which the stockholder has consented to receive notice;
- (iii) if by a posting on an electronic network together with separate notice to the stockholder of such specific posting, upon the later of (A) such posting and (B) the giving of such separate notice; and
- (iv) if by any other form of electronic transmission, when directed to the stockholder.

An affidavit of the secretary or an assistant secretary or of the transfer agent or other agent of the corporation that the notice has been given by a form of electronic transmission shall, in the absence of fraud, be *prima facie* evidence of the facts stated therein.

An “electronic transmission” means any form of communication, not directly involving the physical transmission of paper, that creates a record that may be retained, retrieved, and reviewed by a recipient thereof, and that may be directly reproduced in paper form by such a recipient through an automated process.

7.3 NOTICE TO STOCKHOLDERS SHARING AN ADDRESS

Except as otherwise prohibited under the DGCL, without limiting the manner by which notice otherwise may be given effectively to stockholders, any notice to stockholders given by the corporation under the provisions of the DGCL, the certificate of incorporation or these bylaws shall be effective if given by a single written notice to stockholders who share an address if consented to by the stockholders at that address to whom such notice is given. Any such consent shall be revocable by the stockholder by written notice to the corporation. Any stockholder who fails to object in writing to the corporation, within 60 days of having been given written notice by the corporation of its intention to send the single notice, shall be deemed to have consented to receiving such single written notice.

7.4 NOTICE TO PERSON WITH WHOM COMMUNICATION IS UNLAWFUL

Whenever notice is required to be given, under the DGCL, the certificate of incorporation or these bylaws, to any person with whom communication is unlawful, the giving of such notice to such person shall not be required and there shall be no duty to apply to any governmental authority or agency for a license or permit to give such notice to such person. Any action or meeting which shall be taken or held without notice to any such person with whom communication is unlawful shall have the same force and effect as if such notice had been duly given. In the event that the action taken by the corporation is such as to require the filing of a certificate under the DGCL, the certificate shall state, if such is the fact and if notice is required, that notice was given to all persons entitled to receive notice except such persons with whom communication is unlawful.

7.5 WAIVER OF NOTICE

Whenever notice is required to be given to stockholders, directors or other persons under any provision of the DGCL, the certificate of incorporation or these bylaws, a written waiver, signed by the person entitled to notice, or a waiver by electronic transmission by the person entitled to notice, whether before or after the time of the event for which notice is to be given, shall be deemed equivalent to notice. Attendance of a person at a meeting shall constitute a waiver of notice of such meeting, except when the person attends a meeting for the express purpose of objecting at the beginning of the meeting, to the transaction of any business because the meeting is not lawfully called or convened. Neither the business to be transacted at, nor the purpose of, any regular or special meeting of the stockholders or the board of directors, as the case may be, need be specified in any written waiver of notice or any waiver by electronic transmission unless so required by the certificate of incorporation or these bylaws.

ARTICLE VIII — INDEMNIFICATION

8.1 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN THIRD PARTY PROCEEDINGS

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (a “Proceeding”) (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director of the corporation or an officer of the corporation, or while a director of the corporation or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, against expenses (including attorneys’ fees), judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such Proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had no reasonable cause to believe such person’s conduct was unlawful. The termination of any Proceeding by judgment, order, settlement, conviction, or upon a plea of *nolo contendere* or its equivalent, shall not, of itself, create a presumption that the person did not act in good faith and in a manner which such person reasonably believed to be in or not opposed to the best interests of the corporation, and, with respect to any criminal action or proceeding, had reasonable cause to believe that such person’s conduct was unlawful.

8.2 INDEMNIFICATION OF DIRECTORS AND OFFICERS IN ACTIONS BY OR IN THE RIGHT OF THE CORPORATION

Subject to the other provisions of this Article VIII, the corporation shall indemnify, to the fullest extent permitted by the DGCL, as now or hereinafter in effect, any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action or suit by or in the right of the corporation to procure a judgment in its favor by reason of the fact that such person is or was a director or officer of the corporation, or while a director or officer of the corporation is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection with the defense or settlement of such action or suit if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation; except that no indemnification shall be made in respect of any claim, issue or matter as to which such person shall have been adjudged to be liable to the corporation unless and only to the extent that the Court of Chancery or the court in which such action or suit was brought shall determine upon application that, despite the adjudication of liability but in view of all the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which the Court of Chancery or such other court shall deem proper.

8.3 SUCCESSFUL DEFENSE

To the extent that a present or former director or officer of the corporation has been successful on the merits or otherwise in defense of any action, suit or proceeding described in Section 8.1 or Section 8.2, or in defense of any claim, issue or matter therein, such person shall be indemnified against expenses (including attorneys' fees) actually and reasonably incurred by such person in connection therewith.

8.4 INDEMNIFICATION OF OTHERS

Subject to the other provisions of this Article VIII, the corporation shall have power to indemnify its employees and its agents to the extent not prohibited by the DGCL or other applicable law. The board of directors shall have the power to delegate the determination of whether employees or agents shall be indemnified to such person or persons as the board of determines.

8.5 ADVANCED PAYMENT OF EXPENSES

Expenses (including attorneys' fees) incurred by an officer or director of the corporation in defending any Proceeding shall be paid by the corporation in advance of the final disposition of such Proceeding upon receipt of a written request therefor (together with documentation reasonably evidencing such expenses) and an undertaking by or on behalf of the person to repay such amounts if it shall ultimately be determined that the person is not entitled to be indemnified under this Article VIII or the DGCL. Such expenses (including attorneys' fees) incurred by former directors and officers or other employees and agents may be so paid upon such terms and conditions, if any, as the corporation deems reasonably appropriate and shall be subject to the corporation's expense guidelines. The right to advancement of expenses shall not apply to any claim for which indemnity is excluded pursuant to these bylaws, but shall apply to any Proceeding referenced in Section 8.6(ii) or 8.6(iii) prior to a determination that the person is not entitled to be indemnified by the corporation.

8.6 LIMITATION ON INDEMNIFICATION

Subject to the requirements in Section 8.3 and the DGCL, the corporation shall not be obligated to indemnify any person pursuant to this Article VIII in connection with any Proceeding (or any part of any Proceeding):

- (i) for which payment has actually been made to or on behalf of such person under any statute, insurance policy, indemnity provision, vote or otherwise, except with respect to any excess beyond the amount paid;
- (ii) for an accounting or disgorgement of profits pursuant to Section 16(b) of the 1934 Act, or similar provisions of federal, state or local statutory law or common law, if such person is held liable therefor (including pursuant to any settlement arrangements);
- (iii) for any reimbursement of the corporation by such person of any bonus or other incentive-based or equity-based compensation or of any profits realized by such person from the sale of securities of the corporation, as required in each case under the 1934 Act (including any such reimbursements that arise from an accounting restatement of the corporation pursuant to Section 304 of the Sarbanes-Oxley Act of 2002 (the “Sarbanes-Oxley Act”), or the payment to the corporation of profits arising from the purchase and sale by such person of securities in violation of Section 306 of the Sarbanes-Oxley Act), if such person is held liable therefor (including pursuant to any settlement arrangements);
- (iv) initiated by such person against the corporation or its directors, officers, employees, agents or other indemnitees, unless (a) the board of directors authorized the Proceeding (or the relevant part of the Proceeding) prior to its initiation, (b) the corporation provides the indemnification, in its sole discretion, pursuant to the powers vested in the corporation under applicable law, (c) otherwise required to be made under Section 8.7 or (d) otherwise required by applicable law; or
- (v) if prohibited by applicable law; *provided, however*, that if any provision or provisions of this Article VIII shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (1) the validity, legality and enforceability of the remaining provisions of this Article VIII (including, without limitation, each portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable, that is not itself held to be invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (2) to the fullest extent possible, the provisions of this Article VIII (including, without limitation, each such portion of any paragraph or clause containing any such provision held to be invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

8.7 DETERMINATION; CLAIM

If a claim for indemnification or advancement of expenses under this Article VIII is not paid in full within 90 days after receipt by the corporation of the written request therefor, the claimant shall be entitled to an adjudication by a court of competent jurisdiction of his or her entitlement to such indemnification or advancement of expenses. The corporation shall indemnify such person against any and all expenses that are incurred by such person in connection with any action for indemnification or advancement of expenses from the corporation under this Article VIII, to the extent such person is successful in such action, and to the extent not prohibited by law. In any such suit, the corporation shall, to the fullest extent not prohibited by law, have the burden of proving that the claimant is not entitled to the requested indemnification or advancement of expenses.

8.8 NON-EXCLUSIVITY OF RIGHTS

The indemnification and advancement of expenses provided by, or granted pursuant to, this Article VIII shall not be deemed exclusive of any other rights to which those seeking indemnification or advancement of expenses may be entitled under the certificate of incorporation or any statute, bylaw, agreement, vote of stockholders or disinterested directors or otherwise, both as to action in such person's official capacity and as to action in another capacity while holding such office. The corporation is specifically authorized to enter into individual contracts with any or all of its directors, officers, employees or agents respecting indemnification and advancement of expenses, to the fullest extent not prohibited by the DGCL or other applicable law.

8.9 INSURANCE

The corporation may purchase and maintain insurance on behalf of any person who is or was a director, officer, employee or agent of the corporation, or is or was serving at the request of the corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise against any liability asserted against such person and incurred by such person in any such capacity, or arising out of such person's status as such, whether or not the corporation would have the power to indemnify such person against such liability under the provisions of the DGCL.

8.10 SURVIVAL

The rights to indemnification and advancement of expenses conferred by this Article VIII shall continue as to a person who has ceased to be a director, officer, employee or agent and shall inure to the benefit of the heirs, executors and administrators of such a person.

8.11 EFFECT OF REPEAL OR MODIFICATION

Any amendment, alteration or repeal of this Article VIII shall not adversely affect any right or protection hereunder of any person in respect of any act or omission occurring prior to such amendment, alteration or repeal.

8.12 CERTAIN DEFINITIONS

For purposes of this Article VIII, references to the "corporation" shall include, in addition to the resulting corporation, any constituent corporation (including any constituent of a constituent) absorbed in a consolidation or merger which, if its separate existence had continued, would have had power and authority to indemnify its directors, officers, employees or agents, so that any person who is or was a director, officer, employee or agent of such constituent corporation, or is or was serving at the request of such constituent corporation as a director, officer, employee or agent of another corporation, partnership, joint venture, trust or other enterprise, shall stand in the same position under the provisions of this Article VIII with respect to the resulting or surviving corporation as such person would have with respect to such constituent corporation if its separate existence had continued. For purposes of this Article VIII, references to "other enterprises" shall include employee benefit plans; references to "finances" shall include any excise taxes assessed on a person with respect to an employee benefit plan (excluding any "parachute payments" within the meanings of Sections 280G and 4999 of the Internal Revenue Code of 1986, as amended); and references to "serving at the request of the corporation" shall include any service as a director, officer, employee or agent of the corporation which imposes duties on, or involves services by, such director, officer, employee or agent with respect to an employee benefit plan, its participants or beneficiaries; and a person who acted in good faith and in a manner such person reasonably believed to be in the interest of the participants and beneficiaries of an employee benefit plan shall be deemed to have acted in a manner "not opposed to the best interests of the corporation" as referred to in this Article VIII.

ARTICLE IX — GENERAL MATTERS

9.1 EXECUTION OF CORPORATE CONTRACTS AND INSTRUMENTS

Except as otherwise provided by law, the certificate of incorporation or these bylaws, the board of directors may authorize any officer or officers, or agent or agents, to enter into any contract or execute any document or instrument in the name of and on behalf of the corporation; such authority may be general or confined to specific instances. Unless so authorized or ratified by the board of directors or within the agency power of an officer, no officer, agent or employee shall have any power or authority to bind the corporation by any contract or engagement or to pledge its credit or to render it liable for any purpose or for any amount.

9.2 FISCAL YEAR

The fiscal year of the corporation shall be fixed by resolution of the board of directors and may be changed by the board of directors.

9.3 SEAL

The corporation may adopt a corporate seal, which shall be adopted and which may be altered by the board of directors. The corporation may use the corporate seal by causing it or a facsimile thereof to be impressed or affixed or in any other manner reproduced.

9.4 CONSTRUCTION; DEFINITIONS

Unless the context requires otherwise, the general provisions, rules of construction, and definitions in the DGCL shall govern the construction of these bylaws. Without limiting the generality of this provision, the singular number includes the plural, the plural number includes the singular, and the term “person” includes both an entity and a natural person.

ARTICLE X — AMENDMENTS

These bylaws may be adopted, amended or repealed by the stockholders entitled to vote; *provided, however*, that the affirmative vote of the holders of at least 66 2/3% of the total voting power of outstanding voting securities, voting together as a single class, shall be required for the stockholders of the corporation to alter, amend or repeal, or adopt any bylaw inconsistent with, the following provisions of these bylaws: Article II, Sections 3.1, 3.2, 3.4 and 3.11 of Article III, Article VIII and this Article X (including, without limitation, any such Article or Section as renumbered as a result of any amendment, alteration, change, repeal, or adoption of any other Bylaw). The board of directors shall also have the power to adopt, amend or repeal bylaws; *provided, however*, that a bylaw amendment adopted by stockholders which specifies the votes that shall be necessary for the election of directors shall not be further amended or repealed by the board of directors.

INOGEN, INC.

CERTIFICATE OF AMENDMENT OF BYLAWS

The undersigned hereby certifies that he or she is the duly elected, qualified, and acting Secretary or Assistant Secretary of Inogen, Inc., a Delaware corporation and that the foregoing bylaws, comprising twenty-six (26) pages, were amended and restated on October 11, 2013 by the corporation's Board of Directors.

IN WITNESS WHEREOF, the undersigned has hereunto set his or her hand this 13th day of October, 2013.

/s/ Alison Bauerlein

Alison Bauerlein

Secretary

Description of capital stock

The following is a summary of information concerning capital stock of Inogen, Inc. (“us,” “our,” “we” or the “Company”) and certain provisions of our amended and restated certificate of incorporation and amended and restated bylaws currently in effect. This summary does not purport to be complete and is qualified in its entirety by the provisions of our amended and restated certificate of incorporation, amended and restated bylaws and amended and restated investors rights agreement, as amended, each previously filed with the Securities and Exchange Commission (“SEC”) and incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.4 is a part, as well as to the applicable provisions of the Delaware General Corporation Law (the “DGCL”). We encourage you to read our certificate of incorporation, bylaws and the applicable portions of the DGCL carefully.

General

Our amended and restated certificate of incorporation authorizes two classes of stock, common stock and preferred stock. Our authorized capital stock consists of 200,000,000 shares of common stock, \$0.001 par value per share, and 10,000,000 shares of preferred stock, \$0.001 par value per share.

Common stock

The holders of our common stock are entitled to one vote per share on all matters to be voted on by our stockholders. Subject to preferences that may be applicable to any outstanding shares of preferred stock, holders of common stock are entitled to receive ratably such dividends as may be declared by our board of directors out of funds legally available for that purpose. In the event of our liquidation, dissolution or winding up, the holders of common stock are entitled to share ratably in all assets remaining after the payment of liabilities, subject to the prior distribution rights of preferred stock then outstanding. Holders of common stock have no preemptive, conversion or subscription rights. There are no redemption or sinking fund provisions applicable to the common stock.

Preferred stock

Our board of directors has the authority, without further action by our stockholders, to designate and issue up to 10,000,000 shares of preferred stock in one or more series. Our board of directors may also designate the rights, preferences and privileges of each such series of preferred stock, any or all of which may be greater than or senior to those of the common stock. Though the actual effect of any such issuance on the rights of the holders of common stock will not be known until our board of directors determines the specific rights of the holders of preferred stock, the potential effects of such an issuance include:

- diluting the voting power of the holders of common stock;
- reducing the likelihood that holders of common stock will receive dividend payments;
- reducing the likelihood that holders of common stock will receive payments in the event of our liquidation, dissolution, or winding up; and
- delaying, deterring or preventing a change-in-control or other corporate takeover.

Dividends

Subject to preferences that may be applicable to any then outstanding preferred stock, holders of common stock are entitled to receive dividends, if any, as may be declared from time to time by our board of directors out of legally available funds.

Liquidation

In the event of our liquidation, dissolution or winding up, holders of common stock will be entitled to share ratably in the net assets legally available for distribution to stockholders after the payment of all of our debts and other liabilities and the satisfaction of any liquidation preference granted to the holders of any then outstanding shares of preferred stock.

Rights and preferences

Holders of common stock have no preemptive, conversion, subscription or other rights, and there are no redemption or sinking fund provisions applicable to the common stock. The rights, preferences and privileges of the holders of common stock are subject to and may be adversely affected by, the rights of the holders of shares of any series of preferred stock that we may designate in the future.

Registration rights

One holder of our outstanding shares of common stock has rights, subject to some conditions, to require us to file registration statements covering the sale of their shares or to include their shares in registration statements that we may file for ourselves or other stockholders. The Company is generally obligated to bear the expenses, other than underwriting discounts and sales commissions, of any such registrations. This summary does not purport to be complete and is qualified in its entirety by the provisions of our investors rights agreement, as amended, copies of which have been filed as exhibits to this Annual Report on Form 10-K.

Voting rights

Under the provisions of our amended and restated certificate of incorporation, holders of our common stock are entitled to one vote for each share of common stock held by such holder on any matter submitted to a vote at a meeting of stockholders. In addition, our amended and restated certificate of incorporation provides that certain corporate actions require the approval of our stockholders. These actions, and the vote required, are as follows:

- the removal of a director requires the vote of a majority of the voting power of our issued and outstanding capital stock entitled to vote in the election of directors; and
- the amendment of provisions of our amended and restated certificate of incorporation relating to blank check preferred stock, the classification of our directors, the removal of directors, the filling of vacancies on our board of directors, cumulative voting, and annual and special meetings of our stockholders require the vote of 66 2/3% of our then outstanding voting securities.

Anti-takeover effects of Delaware law and our amended and restated certificate of incorporation and amended and restated bylaws

Delaware law

Certain provisions of Delaware law and our restated certificate of incorporation and bylaws contain provisions that could have the effect of delaying, deferring or discouraging another party from acquiring control of us. These provisions, which are summarized below, are expected to discourage certain types of coercive takeover practices and inadequate takeover bids. These provisions are also designed in part to encourage anyone seeking to acquire control of us to negotiate with our board of directors. We believe that the advantages gained by protecting our ability to negotiate with any unsolicited and potentially unfriendly acquirer outweigh the disadvantages of discouraging such proposals, including those priced above the then-current market value of our common stock, because, among other reasons, the negotiation of such proposals could improve their terms.

Amended and restated certificate of incorporation and amended and restated bylaws

Our amended and restated certificate of incorporation and amended and restated bylaws include provisions that:

- authorize our board of directors to issue, without further action by our stockholders, up to 10,000,000 shares of undesignated preferred stock;
- require that any action to be taken by our stockholders be effected at a duly called annual or special meeting and not by written consent;
- specify that special meetings of our stockholders can be called only by our board of directors, the Chairman of the board of directors, or the Chief Executive Officer;
- establish an advance notice procedure for stockholder approvals to be brought before an annual meeting of our stockholders, including proposed nominations of persons for election to our board of directors;
- provide that directors may be removed only for cause;
- provide that vacancies on our board of directors may be filled only by a majority of directors then in office, even though less than a quorum;
- establish that our board of directors is divided into three classes, Class I, Class II and Class III, with each class serving staggered terms;
- specify that no stockholder is permitted to cumulate votes at any election of our board of directors; and
- require a super majority of the stockholders and a majority of the board to amend certain of the above-mentioned provisions.

Exclusive jurisdiction

Under the provisions of our amended and restated certificate of incorporation, unless we consent in writing to the selection of an alternative forum, the Court of Chancery of the State of Delaware will be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of us; (ii) any action asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or other employees to us or our stockholders; (iii) any action asserting a claim against us arising pursuant to any provision of the Delaware General Corporation Law or our amended and restated certificate of incorporation or amended and restated bylaws; or (iv) any action asserting a claim against us governed by the internal affairs doctrine. The enforceability of similar choice of forum provisions in other companies' certificates of incorporation has been challenged in legal proceedings, and it is possible that, in connection with any action, a court could find the choice of forum provisions contained in our amended and restated certificate of incorporation to be inapplicable or unenforceable in such action.

Delaware anti-takeover statute

We are subject to the provisions of Section 203 of the Delaware General Corporation Law regulating corporate takeovers. In general, Section 203 prohibits a publicly-held Delaware corporation from engaging, under certain circumstances, in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder unless:

- prior to the date of the transaction, our board of directors of the corporation approved either the business combination or the transaction which resulted in the stockholder becoming an interested stockholder;
 - upon completion of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least 85% of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the voting stock outstanding, but not for determining the outstanding voting stock owned by the interested stockholder, (1) shares owned by persons who are directors and also officers, and (2) shares owned by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
-

- at/or subsequent to the date of the transaction, the business combination is approved by our board of directors of the corporation and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock which is not owned by the interested stockholder.

Generally, a business combination includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. An interested stockholder is a person who, together with affiliates and associates, owns or, within three years prior to the determination of interested stockholder status, did own 15% or more of a corporation's outstanding voting stock. We expect the existence of this provision to have an anti-takeover effect with respect to transactions our board of directors does not approve in advance. We also anticipate that Section 203 may discourage business combinations or other attempts that might result in the payment of a premium over the market price for the shares of common stock held by our stockholders.

The provisions of Delaware law and our restated certificate of incorporation and amended and restated bylaws could have the effect of discouraging others from attempting hostile takeovers and, as a consequence, they may also inhibit temporary fluctuations in the market price of our common stock that often result from actual or rumored takeover attempts. These provisions may also have the effect of preventing changes in our management. It is possible that these provisions could make it more difficult to accomplish transactions that stockholders may otherwise deem to be in their best interests.

Transfer agent and registrar

The transfer agent and registrar for our common stock is Computershare. The transfer agent and registrar's address is P.O. Box 43006, Providence, RI 02940-3006. The transfer agent's telephone number is (888) 667-7671.

Listing

Our common stock has been listed on the NASDAQ Global Select Market under the symbol "INGN."

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-223280, 333-216352, 333-210175, 333-203842 and 333-194016 on Form S-8 of our reports dated February 25, 2020, relating to the financial statements of Inogen, Inc. (the “Company”), and the effectiveness of the Company’s internal control over financial reporting, appearing in this Annual Report on Form 10-K for the year ended December 31, 2019.

/s/ DELOITTE & TOUCHE LLP

Los Angeles, California
February 25, 2020

**CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Scott Wilkinson, certify that:

1. I have reviewed this annual report on Form 10-K of Inogen, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 25, 2020

By: /s/ Scott Wilkinson
Scott Wilkinson
Chief Executive Officer
President
Director
(Principal Executive Officer)

**CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF
THE SARBANES-OXLEY ACT OF 2002**

I, Alison Bauerlein, certify that:

1. I have reviewed this annual report on Form 10-K of Inogen, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 25, 2020

By: /s/ Alison Bauerlein
 Alison Bauerlein
 Chief Financial Officer
 Executive Vice President, Finance
 Secretary and Treasurer
 (Principal Financial and Accounting Officer)

**CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. § 1350, AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002**

I, Scott Wilkinson, the chief executive officer of Inogen, Inc. (the “Company”), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Annual Report of the Company on Form 10-K for the year ended December 31, 2019 (the “Report”), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

February 25, 2020

By: /s/ Scott Wilkinson
Scott Wilkinson
Chief Executive Officer
President
Director

I, Alison Bauerlein, the chief financial officer of Inogen, Inc. (the “Company”), certify for the purposes of 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to the best of my knowledge,

(i) the Annual Report of the Company on Form 10-K for the year ended December 31, 2019 (the “Report”), fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

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

February 25, 2020

By: /s/ Alison Bauerlein
Alison Bauerlein
Chief Financial Officer
Executive Vice President, Finance
Secretary and Treasurer