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, 2022

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	**33-0989359**
State or other jurisdiction of incorporation or organization	**I.R.S. Employer Identification No.**
301 Coromar Drive Goleta, California	**93117**
Address of principal executive offices	**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	☐	Accelerated filer	☒
Non-accelerated filer	☐	Smaller reporting company	☐
Emerging growth company	☐		

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

Indicate by check mark whether the registrant has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to §240.10D-1(b). ☐

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 equity held by non-affiliates of the registrant, based on the closing price of the shares of common stock on the last business day of its most recently completed second fiscal quarter, as reported on the NASDAQ Stock Market, was approximately $310.5 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.

The number of shares of the registrant's Common Stock outstanding as of February 17, 2023 was 22,969,574.

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 2023 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, 2022.

Auditor Firm Id:	34	Auditor Name:	Deloitte & Touche LLP	Auditor Location:	Los Angeles, California, USA

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INOGEN, INC.

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 flows, revenue, sources of revenue and results of operations, operating and other expenses;
- the impact of expense inflation on the components we use in our products, and the impact of inflation of the ability of our customers to afford our products;
- the potential for future supply chain constraints;
- our expectations regarding the effect of the COVID-19 pandemic and public health emergency (PHE);
- our assessment and expectations regarding reimbursement rates, future rounds of competitive bidding, Centers for Medicare and Medicaid Services (CMS) changes associated with the COVID-19 pandemic and related PHE impacting respiratory care, CMS changes to Home Use of Oxygen national coverage determination and how those changes are implemented, and future changes in rental revenue;
- our expectations regarding regulatory approvals, including the period of time during which our sales in Europe may be suspended due to delayed government and third-party payor coverage and reimbursement;
- the ability of our competitors to introduce products to the market that may be lower priced than ours, may have more product features than ours, or are otherwise more accepted by the market, including our home medical equipment partners;
- our ability to develop new products, improve our existing products and increase the value of our products;
- 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 prices and manufacturing costs of our products, including our expectations related to the impact of supply chain disruptions on our manufacturing costs and our ongoing efforts to reduce average unit costs for our systems;
- our expectations regarding our sales and marketing channels related to our prescriber sales team, including the expansion of the sales team and concierge service representatives and implementation of healthcare data, insights and its impact on clinician awareness and coverage, portable oxygen concentrator (POC) penetration, and sales team productivity;
- 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 U.S. on certain imported materials and products;
- our ability to successfully acquire and integrate companies and assets;
- our expectations regarding the impact and implementation of trade regulations on our supply chain;
- our expectations regarding excess tax benefits or deficiencies from stock-based compensation and our assessments and estimates of our effective tax rate;

•our expectations of future accounting pronouncements or changes in our accounting policies;

•our internal control environment;

•the effects of seasonal trends on our results of operations and estimated hiring plans;

•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 G3,” “G4,” “G5,” “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 our registered trademarks with the United States Patent and Trademark Office. We own pending trademark applications in the United States for the marks “INOGEN ROVE 4” and “INOGEN ROVE 6”. We own trademark registrations for the mark “Inogen” in Argentina, Australia, Canada, Chile, China, Columbia, Ecuador, South Korea, Malaysia, Mexico, Europe (European Union Registration), the United Kingdom, Iceland, India, Israel, Japan, Kuwait, New Zealand, Norway, Paraguay, Peru, Turkey, Singapore, South Africa, Switzerland, and Uruguay. We own a trademark registration for the mark “イノジェン” in Japan. We own trademark registrations 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, Europe (European Union Registration), and the United Kingdom. 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) and the United Kingdom. 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 a trademark application for the Inogen design in Bolivia. We own a trademark registration for the Inogen design in China. We own a trademark registration for the mark “إنوجن” in Saudi Arabia. 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

Inogen is a medical technology company whose purpose is improving lives through respiratory care. We are a global leader in portable oxygen therapy solutions for patients with chronic respiratory conditions. Our leading portfolio of innovative POCs are optimized to deliver high output ratio-to-weight, meaningful sound suppression and among the longest run times in the industry so that we can meet the needs of patients across a variety of disease states. As of December 31, 2022, we had twenty-four pending patent applications and seventy-two issued patents relating to the design and construction of our respiratory devices. We are positioned in the market as both a medical technology company and as a home medical equipment provider that is accredited in all 50 states in the United States with a significant patient, prescriber and provider reach. Our products have been sold in 59 countries around the world through distributors and equipment companies outside of the United States and through direct patient and prescriber sales, as well as resellers and home medical equipment companies in the United States. We employed 1,026 people as of December 31, 2022 and had total revenue of $377.2 million for the period ended December 31, 2022.

Corporate history

We were incorporated in Delaware on November 27, 2001. On February 14, 2014, we completed an initial public offering of common stock and began trading on the Nasdaq Global Select Market, trading under the ticker symbol "INGN".

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 completed the acquisition of New Aera, Inc (New Aera) on August 9, 2019.

The market

Chronic obstructive pulmonary disease

We are focused on oxygen therapy and opportunities in the global respiratory care market. We believe that our portable oxygen therapy solutions can help patients with chronic respiratory conditions, including patients with chronic obstructive pulmonary disease, or COPD.

COPD is a group of lung diseases including chronic bronchitis and emphysema. The main cause of COPD is smoking, but other factors like air pollution, secondhand smoke and dust, as well as fumes and chemicals can cause COPD. There is currently no cure for COPD, and it is a progressive and debilitating disease that is characterized by a gradual loss of lung function and airflow limitation that is not fully reversible. The symptoms of COPD can range from chronic cough and sputum production to insufficient levels of oxygen in the blood, and severe shortness of breath.

COPD has a huge impact on patients and also to the healthcare system. According to the Forum of International Respiratory Societies, an estimated 200 million people in the world have COPD. In the United States, a 2022 publication stated that COPD is the sixth leading cause of death. The Centers for Disease Control (CDC) and Prevention in the United States estimates that prevalence of COPD amongst adults 18 years or older was around 5.2% to 6.2% based on CDC data of age-adjusted prevalence of COPD from 2011 to 2020. In terms of economic impact, the total economic cost from COPD in the United States was approximately $50 billion in 2020 with close to 1.6 million COPD emergency department visits in 2019.

A peer-reviewed publication in the New England Journal of Medicine has stated that long-term oxygen therapy has been shown help COPD patients who have severely low blood oxygen or hypoxemia. Hypoxemic patients are unable to convert oxygen found in the air into the bloodstream in an efficient manner. Over time it can lead to a lack of oxygen in organs and tissues (hypoxia) and acute respiratory failure. As COPD progresses into later stages, patients may need long-term oxygen therapy as part of their treatment. Other diseases including cystic fibrosis or congestive heart failure may lead to lower oxygen in the bloodstream and may also benefit from long-term oxygen therapy.

Oxygen therapy

Traditionally, oxygen patients have relied on stationary oxygen concentrator systems for use in the home and oxygen tanks or cylinders for mobile use, which we refer to as 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.

Inogen created its first portable oxygen concentrators with a goal of creating a product that allows patients the chance to remain ambulatory while managing the impact of their disease. Between 2012 and 2021, portable oxygen concentrators represented the fastest-growing segment of the Medicare oxygen therapy market. However, based on 2021 traditional fee-for-service Medicare data, we estimate the portable oxygen concentrators still only represents approximately 22% of the total long-term oxygen therapy market in the United States. The traditional fee-for-service Medicare data does not include data from private insurance, Medicare Advantage, Medicaid and cash-pay patients in the market.

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 reimbursement rate changes;
- 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; and
- constrained manufacturing costs of conventional portable oxygen concentrators, driven by home medical equipment provider preference for products that have lower upfront equipment cost.

We believe that Inogen has an opportunity to grow and further develop the market for portable oxygen concentrator utilization, particularly for patients with chronic respiratory conditions.

Our transformation

Over the last year we have been strategically focused on evolving Inogen from a home medical equipment provider with product development capabilities, to a medical device company in respiratory care with home medical equipment operations in the United States. As such, we have the capability to service patients and prescribers directly, as well as other home medical equipment providers and distributors. As a part of this strategic focus we have been transforming the commercial organization to grow our business with a higher level of productivity and efficiency in our direct-to-consumer efforts. We have also made organizational changes to focus on a prescriber sales team. We believe this is complementary to our direct-to-consumer channel and provides the opportunity to work directly with prescribers and obtain prescriber referrals at the point of a patient's diagnosis and prescription. In addition, we have piloted projects with the intent to drive efficiency and productivity for our commercial organization in the United States. These projects include streamlining and digitizing back-office processes in order to remove redundancies, improve process, and also scale back-office activities through digitization.

Business strategy

We believe there is an opportunity to grow portable oxygen therapy usage and develop the market further to help patients with chronic conditions breathe better and help providers improve patient outcomes. Our strategy for expanding our business and growing the market consists of the following four key elements:

1. **Grow our core business.** We believe we have an opportunity to drive penetration of POC-based oxygen therapy versus other oxygen therapy modalities.
2. **Enhance our business.** We are committed to the ongoing innovation of our products to meet the needs of patients and providers to manage lower blood oxygen and shortness-of-breath associated with COPD and other disease indications.
3. **Accelerate our business**. We believe that we can develop the market and expand growth opportunities by generating clinical evidence. Our clinical approach involves engaging with Key Opinion Leaders (KOLs) through our Scientific Advisory Board. The KOLs goals are focused on advocating for the right therapy for patients and changing the behavior of prescribers.
4. **Accelerate growth through strategic transactions.** We selectively evaluate potential strategic transactions to grow our portfolio or capabilities to serve the respiratory care market.

Our products

Our Inogen One portable oxygen systems provide patients who require long-term oxygen therapy with a reliable, lightweight single solution product that we believe allows patients the chance to remain ambulatory while managing the impact of their disease and eliminates dependence on both oxygen tanks and cylinders as well as stationary concentrators. We have created a market leading portfolio of portable oxygen concentrators.

POC product features

We market our current portable product offerings, the Inogen One G5 and the Inogen One G4, 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. 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. We launched a new product in Europe in December 2022, Rove 6. Rove 6 offers more flexibility for patients with six oxygen flow settings. The following table summarizes our key product features:

	Key Product Specifications		
	Rove 6	**Inogen One G5**	**Inogen One G4**
Capacity (ml/min)	1,260	1,260	630
Weight (lbs)	4.8 (single battery)	4.7 (single battery)	2.8 (single battery)
	5.8 (double battery)	5.7 (double battery)	3.3 (double battery)
Battery run-time	Up to 6.25 hours	Up to 6.5 hours	Up to 2.6 hours
	(single battery)	(single battery)	(single battery)
	Up to 12.75 hours	Up to 13 hours	Up to 5 hours
	(double battery)	(double battery)	(double battery)
Technology effective for overnight use	Yes	Yes	Yes
Sound	37 dBA	38 dBA	40 dBA

All of our portable oxygen 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 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 wireless connectivity platform for the Inogen One G4, Inogen One G5 and Rove 6 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.

In Europe, we released our latest portable oxygen concentrator, Rove 6, in December 2022. Inogen One G5 portable oxygen concentrator was released to market in April 2019 and is among the lightest products on the market and has among the highest oxygen production capabilities of the other sub-5 pound portable oxygen concentrators on the market. The performance parameters around our systems allow us to serve ambulatory long-term oxygen patients based on their clinical needs. Our products enable us to address a patient's particular clinical needs, as well as lifestyle and performance preferences.

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 $276.1 million of our 2022 revenue derived from the United States, approximately 48.3% represented direct-to-consumer sales, 31.2% represented sales to traditional home medical equipment providers, distributors (including our private label partner) and resellers, and 20.5% represented direct-to-consumer rentals.

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.

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.

Our direct-to-consumer rental selling efforts are focused on selling to prescribers in order to serve patients earlier at the point of diagnosis and prescription while capturing a higher proportion of the life-time value of prescribed oxygen therapy. In March 2022, we embarked on an initiative to enhance and reorganize a prescriber sales team to accelerate our rental sales growth and build relationships with prescribers. We believe that these efforts are complementary with our focus on generating clinical evidence in the future and will increase our ability to further expand and develop the market.

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 or their personal preferences. 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.

We have been 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.

We 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 either through insurance reimbursement or retail. 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 prescriber 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.

As of December 31, 2022, we employed 491 people in our Sales and Marketing organization.

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. Medicare's service reimbursement programs represented more than 10% of our total revenue for the years ended December 31, 2022 and 2021. One single customer represented more than 10% of our total revenue for the year ended December 31, 2020. Two customers each represented more than 10% of our net accounts receivable balance with accounts receivable balances of $22.6 million and $9.9 million, respectively, as of December 31, 2022. One single customer and Medicare each represented more than 10% of our net accounts receivable balance with accounts receivable balances of $5.9 million and $2.7 million, respectively, as of December 31, 2021.

We rent products directly to consumers for insurance reimbursement, which resulted in a customer concentration relating to Medicare's service reimbursement programs. Medicare's service reimbursement programs accounted for 77.0%, 81.9% and 81.5% of

rental revenue in 2022, 2021 and 2020, respectively, and based on total revenue were 11.6%, 10.6% and 7.5% for 2022, 2021 and 2020, respectively. Accounts receivable balances relating to Medicare's service reimbursement programs (including held and unbilled receivables, net of allowances) amounted to $2.1 million or 3.4% of total net accounts receivable as of December 31, 2022 compared to $2.7 million or 11.0% of total accounts receivable as of December 31, 2021.

International

Approximately 26.8% of our total revenue was from outside the United States in 2022. 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. To date, we have sold our products in a total of 59 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, 2022, we had 482 people located in the United States who focused on selling our products and providing service and support to distributors and house accounts worldwide and 9 in-house and contract employees and independent employees located in Europe who provided sales and customer support 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 2022, 2021 or 2020.

Our fully-owned subsidiary, Inogen Europe B.V. operates a European customer support site in the Netherlands. This site offers multi-lingual customer service and sales support to improve our European customer support at lower cost. Also in support of our European operations, we produce our Inogen One G3 and Inogen One G5 concentrators and perform related repair activities using a contract manufacturer, Foxconn, located in the Czech Republic to improve our ability to service our European customers.

Customer support

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, 2022, we had a dedicated customer service team that was trained on our products, a clinical support team made up of licensed nurses or respiratory therapists, a patient intake team, an order intake team, and a dedicated billing services team. We provide our patients with a dedicated 24/7 hotline for which 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 needed by the patient or the customer service representative. 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 we provide high-quality customer service to enhance patient comfort, satisfaction, and safety with our products.

Third-party reimbursement

As a provider of home oxygen Inogen participates in the Medicare Part B, Supplementary Medical Insurance Program, which was established by the Social Security Act of 1965. For our rental revenue, we rely significantly on reimbursement from Medicare and private payors. Medicare reimbursement has historically been based on fixed fee schedules. 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. Our sales and rental intake teams 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 have contracts with Medicaid, Medicare Advantage, government and private payors that 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. We had 100 contracts as of December 31, 2022. 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.

Medicare and private insurance rentals represented 15.0% of our total revenue in 2022, up from 12.9% of our total revenue in 2021. The increased rental revenue as a percentage of total revenue was primarily due to increased rental patients on service and increased reimbursement rates.

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, 2022, approximately 77.0% of our rental revenue was derived from Medicare's traditional fee-for-service reimbursement programs.

Medicare revenue, including patient co-insurance and deductible obligations, represented 11.6% of our total revenue in the year ended December 31, 2022 and 10.6% in the year ended December 31, 2021.

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

Manufacturing and raw materials

We assemble the compressors, sieve beds, concentrators and certain manifolds in-house in order to improve quality control and reduce cost. In support of our European sales, we use a contract manufacturer located in the Czech Republic to manufacture high volume products and perform product repairs to improve delivery to our European accounts. 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 expect to maintain our assembly operations for our products at our facilities in Texas and California. In 2022, we were focused on securing supply for components to make our products which included higher costs of semiconductor chips, reducing the cost of our Inogen One G5 product (excluding semiconductor chips), 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 have elected to source certain key components from single sources of supply, including our batteries, motors, valves, stationary concentrators, columns, and some molded plastic components. In some cases, maintaining a single source of supply can allow us to control production costs and inventory levels and to manage component quality, but also may lead to supply availability risks and means our ability to maintain production is dependent on these single source suppliers, which may put us at an increased risk of supply disruption, as we have seen from the production halt we implemented in early January 2022 through early February 2022. In order to help 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, a continued reduction or halt in supply from one of these single-source suppliers, any dual-sourced suppliers or any other limited-source suppliers with similar sub-component suppliers could limit or prevent our ability to manufacture our products or devices until one or more sufficient replacement suppliers 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 in some cases those components are available in only limited supplies from limited manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays or stoppages, 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 Plano, 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.

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 2020 and 2021, our contract manufacturer produced the vast majority of the Inogen One G3 concentrators required to support our European demand. Our contract manufacturer also began manufacturing the Inogen One G5 in January 2020 and produced the vast majority of the Inogen One G5 concentrators required to support our European demand in 2021 and 2022, which we expect to continue in 2023. Lastly, our contract manufacturer began repair services for the Inogen One product line in 2020 and repaired the majority of the Inogen One concentrators for our European customers. This has allowed us to continue to expand our manufacturing and repair capacity and redirect our U.S. manufacturing activities to focus on growth in the U.S. and on our largest volume products, the Inogen One G5 and the Inogen One G4.

As of December 31, 2022, we had 286 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 field. We use a combination of research and development staff along with third party resources to develop our products. As of December 31, 2022, our research and development staff included 28 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 existing products, as well as developing our next-generation oxygen concentrators. We have leveraged our seventy-two issued patents while also have historically reduced our overall POC system cost and intend to continue to seek ways to reduce our cost of revenue through manufacturing and design improvements.

We have released seven 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. In December 2022, we launched the Rove 6 in Europe, a new product that is not yet launched in the United States. 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. Our pipeline and future innovation are informed by our Scientific Advisory Board and engagement with KOLs.

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

Competition

The long-term oxygen 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. Some of our competitors are large, well-capitalized companies with greater resources and other advantages than we have.

Our significant manufacturing competitors are Respironics (a subsidiary of Koninklijke Philips N.V.), Caire Medical (subsidiary of NGK Spark Plug), DeVilbiss Healthcare (a subsidiary of Drive Medical), O2 Concepts, Precision Medical, Gas Control Equipment (subsidiary of Colfax), Nidek Medical, 3B Medical, SysMed, and Belluscura. This is not an exhaustive list of competitors. Given the relatively straightforward regulatory path in the oxygen therapy 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., Rotech Healthcare, Inc., and Viemed 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. In addition, providers may reduce or eliminate purchases from us due to our increased focus on building out a prescriber sales team and pursuing rentals directly, which could be in competition with our providers in the United States. 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.

Government regulation

Inogen One systems, Inogen At Home systems, 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 510(k) clearance, a De Novo authorization, 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 unless they may be marketed under a De Novo authorization from the FDA.

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 "predicate device" which can be 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, 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, Inogen One G4, and Inogen One G5 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. We obtained 510(k) clearance for the Rove 4 system on December 9, 2022.

De Novo authorization pathway

The De Novo authorization pathway is a request to the FDA to classify novel devices of low to moderate risk that had automatically been placed in Class III either by virtue of receiving a "not substantially equivalent" (NSE) determination in response to a 510(k) notification or because there is no available predicate to which to claim substantial equivalence. These types of applications are referred to as "Evaluation of Automatic Class III Designation" or "De Novo." FDA review of a De Novo application may lead the FDA to authorize marketing of the device and classify it as either a Class I or II device, the latter of which can serve as a predicate device for other 510(k) premarket notification submissions.

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 inspections and audits by the FDA, certain other regulatory agencies and authorities and our notified body. We have been periodically audited by these organizations and none have identified any major observations with our manufacturing facilities or Good Manufacturing Policies (GMP). 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/clearance, 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 2024. 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. If we were found not to be in compliance with applicable state regulations regarding licensure requirements, 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 bill for Medicare reimbursement. Loss or suspension 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 applicable 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 until compliance is achieved.

Federal anti-kickback and self-referral laws

The Federal Anti-Kickback Statute prohibits, among other things, 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 comply 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 of the physician) has a financial relationship, for the furnishing of certain designated health services for which payment may be made by Medicare or Medicaid, 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, regulations issued for the Federal Anti-Kickback Statute and the Stark Law have undergone significant revisions, and it is reasonable to assume that revisions will occur in the future. While we have attempted to operate in compliance with these laws and regulations, our arrangements may ultimately be found to be not in compliance with applicable federal law.

Federal False Claims Act

The Federal False Claims Act (as amended) provides that the federal government, and under certain circumstances a private party or whistleblower, may bring claims against a person who knowingly presents or causes to be presented a false or fraudulent request for payment to the federal government or uses a false statement or false record to get a claim approved. Violations of the False

Claims Act can result in penalties up to $0.02 million for each claim, plus three times the amount of damages that the federal government sustained. The Company is not aware of any pending claims against it under the False Claims Act.

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 we have processes in place to manage our discount and incentive programs, 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 $0.112 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 anti-kickback and self-referral laws similar and statutes similar to the False Claims Act that apply to DMEPOS suppliers regardless of the payor source, and violations of such laws could result in fines, penalties and restrictions on our ability to operate in these jurisdictions. The Company is not aware of any pending claims against it under such state laws.

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 created a 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 modified the breach reporting standard in a manner that made 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 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. The Substance Use-Disorder Prevention that Promotes Opioid Recovery and Treatment for Patients and Communities Act enacted in 2018, extends the reporting and transparency requirements under the Physician Payments Sunshine Act to physician assistants, nurse practitioners and other mid-level practitioners, with reporting requirements going into effect in 2022 for payments made in 2021. Failure to submit required ownership and investment interest information may result in civil monetary penalties of up to an aggregate of $0.18 million per year (or up to an aggregate of $1.191 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 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 $0.022 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. We received European Medical Device Regulation on December 12, 2022.

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 Medical Device Single Audit Program (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.

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 workday, 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, 2022, we had twenty-four pending patent applications and seventy-two 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. patents 9,592,360 and 10,786,644 are directed to the Inogen One G3 design, U.S. patent 10,695,520 is directed to the design of the Inogen One G4, and U.S. patents 9,283,346, 10,004,869 and 10,869,986 are 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.

Trademarks

"Inogen," "Inogen One," "Inogen One G3," "G4," "G5," "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" our registered trademarks with the United States Patent and Trademark Office. We own pending trademark applications for the marks "INOGEN ROVE 4" and "INOGEN ROVE 6" in the United States. We own trademark registrations for the mark "Inogen" in Argentina, Australia, Canada, Chile, China, Columbia, Ecuador, South Korea, Malaysia, Mexico, Europe (European Union Registration), the United Kingdom, Iceland, India, Israel, Japan, Kuwait, New Zealand, Norway, Paraguay, Peru, Turkey, Singapore, South Africa, Switzerland, and Uruguay. We own a trademark registration for the mark "イノジェン" in Japan. We own trademark registrations 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, Europe (European Union Registration), and the United Kingdom. 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) and the United Kingdom. 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 a trademark application for the Inogen design in Bolivia. We own a trademark registration for the Inogen design in China. We own a trademark registration for the mark "إنوجن" in Saudi Arabia. Other service marks, trademarks, and trade names referred to in this Annual Report on Form 10-K are the property of their respective owners.

Human capital

At Inogen, we believe our employees are critical to our success and our ability to focus on product quality, continuous improvement, and outstanding customer satisfaction. The unique demands of our industry, together with the challenges of running an enterprise focused on the development, manufacture and commercialization of innovative products, require talent that is highly educated and/or has significant industry experience. Additionally, for certain key functions, we require specific expertise to oversee and conduct research and development activities and complex manufacturing requirements for our products. We seek the best people we can find and support them to be productive and engaged. We strive to ensure our measures of safety, remuneration and employee engagement are competitive with those of leading companies in our industry.

Employees

As of December 31, 2022, we had 1,026 full and part-time employees worldwide, consisting of 491 employees in sales, marketing, clinical and client services, 286 employees in operations, manufacturing, quality assurance, manufacturing engineering, and repair, 218 employees in general administration and 31 employees in research and development. In addition, we had 59 temporary workers as of December 31, 2022, primarily in operations, to support spikes in demand. None of our employees are represented by a collective bargaining agreement and we believe that our employee relations are good.

Employee culture

Inogen strives to instill a culture based on our foundational values of (1) We always do what's right, (2) Invest in people, and (3) Treat people right. This is activated through our five cultural pillars which are (1) Create Trust, (2) Inspire Initiative, (3) Achieve Together, (4) Invite Diversity, and (5) Make a Difference.

Additionally, all of our directors, officers, and employees are guided by our Code of Ethics and Conduct, which is published on the Investor Relations section of Inogen's website at: *http://investor.inogen.com/*. The Code of Ethics and Conduct summarizes the compliance and ethical standards we expect of our employees and directors, the procedures for a suspected breach, and the consequences of any substantiated breach. The Code of Ethics and Conduct also constitutes Inogen's Code of Ethics and Conduct under US law and the NASDAQ exchange's listing standards. It deals with conflicts of interest, confidential information, fair dealing with customers, suppliers, competitors, and healthcare professionals, and compliance with financial reporting, insider trading, and other financial market regulation.

Talent acquisition and development

We encourage Inogen employees to take advantage of learning opportunities and we provide financial support through a tuition reimbursement program to help employees complete their college education and be prepared for higher level positions. We are actively working toward a formal career planning program and building out both associate and leader learning curriculums.

Diversity, equity, inclusion, belonging and accessibility (DEIBA)

Diversity, equity, inclusion, belonging and accessibility are essential elements of Inogen's business practices. We are committed to creating and maintaining a workplace in which all employees have an opportunity to participate and contribute to the success of the business and are valued for their skills, experience, and unique perspectives. The collective sum of the individual differences, life experiences, knowledge, inventiveness, innovation, self-expression, unique capabilities and talent that employees invest in their work represents a significant part of our culture as well as our reputation and achievements. We embrace employees' diversity of background, experience, culture, and other characteristics that make employees unique. All employees are expected to exhibit conduct that reflects inclusion during work, at work functions on or off the work site, and at all other company-sponsored and participative events. Our DEIBA Taskforce and Inclusion Ambassador network help guide these efforts through programming and feedback to build a community of psychological safety and inclusion. Internal communications and celebration are further proof points for our efforts as we routinely measure employee engagement in these categories.

Inogen is committed to compliance with all applicable federal and state laws prohibiting discrimination in employment and, therefore, does not discriminate against its employees or applicants based on any legally recognized "protected class". We perform an annual affirmative action review by job role, and we have a process which identifies pay or promotion discrepancies and ensures that we are equitable in our actions and decisions. Even in the case of reductions in force adverse impact analyses are completed to objectively test and inform our decisions. Consistent with the Americans with Disabilities Act and similar state and local laws, we work with qualified employees and applicants with disabilities in order to identify and provide reasonable accommodations that can enable them to perform their jobs. Inogen's equal employment opportunity philosophy applies to all aspects of employment with Inogen including recruiting, hiring, job assignment, training, promotion, job benefits, compensation, discipline, and dismissal. Inogen has implemented policies, procedures, and trainings to ensure that any reports of potential discrimination or harassment are appropriately investigated and corrected.

Health and safety

Our approach to health and safety uses both our management systems and our quality culture to minimize workplace incidents and maximize the care taken for employees who suffer from a workplace incident, per our health and safety policy. Inogen also has a corporate wellness program to promote improved physical and emotional wellbeing.

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.

Climate Change

As a global respiratory therapy and medical device company, Inogen recognizes that greenhouse gas (GHG) emissions affect our climate and pose a serious challenge to the environment—and ultimately to the global economy. We believe that everyone shares responsibility to improve energy efficiency and to reduce GHG emissions in the atmosphere. Inogen supports global and national efforts to mitigate the impact of climate change. Inogen is committed to complying with all applicable laws and regulations that help reduce GHG and encouraging market adoption of low GHG emission technologies. Our position on climate change policy is guided by five principles:

1. We believe that any global or national strategy to address climate change must be environmentally sustainable and economically viable.

2. We believe that any climate change policy should be technology-neutral and designed to encourage private sector innovation and investment so that emissions reductions can be achieved in the most efficient manner possible.

3. We believe that any global or national strategy to address climate change must be developed with input from stakeholder communication, including the public and private sectors, non-governmental organizations, academia, and investors.

4. We believe that any policy to regulate GHG emissions should provide a clear, stable framework that enables the private sector to invest accordingly, and that minimizes the market imbalances that can result from policies applied unequally within or among nations.

5. We believe that any policy to regulate GHG emissions should fairly account for companies that have already taken voluntary steps to reduce their GHG emissions.

Inogen is a responsible corporate citizen that has done business in 59 countries and territories around the world. Our business success and our environmental stewardship both depend on the efficiency of our global distribution network. Our long-term GHG reduction strategy is to optimize the processes that consume non-renewable resources within this network. We also recognize that, as a critical component of our customers' supply chains, Inogen plays an important role in helping them operate in a more environmentally sustainable way.

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, 2022, 2021, and 2020, substantially all of our long-lived assets were located within the United States. See Note 2 to 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. In particular, due to the COVID-19 pandemic and related PHE, we have seen and expect to continue to see a disruption in our normal seasonal trends due to the mandates and behaviors emanating from the COVID-19 pandemic and related PHE, including shelter-in-place orders, reduced travel, and lower consumer confidence, and we did not see the typical seasonal increases in direct-to-consumer sales in 2020 that we have seen in prior years, although a partial return to normal seasonal trends was seen in 2021 and 2022. Additionally, 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, 2022, 2021, and 2020, the sales revenue in the second quarter accounted for 27.9%, 29.0% and 23.4%, respectively, and the sales revenue in the third quarter accounted for 28.3%, 26.0% and 23.8%, 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 301 Coromar 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 Reports 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 23, 2023.

Name	Age	Position
Nabil Shabshab	57	Chief Executive Officer, President, and Director
Kristin Caltrider	55	Executive Vice President, Chief Financial Officer and Corporate Treasurer
George Parr	52	Executive Vice President, Chief Commercial Officer
Dr. Stanislav Glezer	50	Executive Vice President, Chief Technology Officer
Jason Somer	55	Executive Vice President, General Counsel and Corporate Secretary
Bart Sanford [(1)]	57	Executive Vice President, Operations

(1) As disclosed in the Current Report on Form 8-K we filed with the SEC on February 10, 2023, Mr. Sanford will be separating from the Company on or before March 1, 2023.

Nabil Shabshab has served as our President, Chief Executive Officer, and as a director since February 2021. Previously, Mr. Shabshab served as Worldwide President of Diabetes Care and Digital Health at Becton Dickinson and Company from August 2017 until January 2021 and served as its Chief Marketing Officer and Executive Vice President of Strategic Planning from August 2011 until May 2017. Previously, from 2006 to 2010, Mr. Shabshab served as EVP, Global Portfolio, Chief Marketing Officer and Head of RD&E of Diversey, Inc., a cleaning and sanitation solutions company. Prior to that, from 2004 to 2006, Mr. Shabshab served as Principal of The Zyman Group, a marketing consulting firm. From 2002 to 2004, Mr. Shabshab served as Vice President, Client Solutions and Consulting, of Symphony IRI, a consumer marketing firm. Prior to that, Mr. Shabshab served in various sales and marketing roles in consumer goods companies. Mr. Shabshab holds an MBA from Northwestern University Kellogg School of Management and a B.S. in Computer Sciences from American Lebanese University. The board of directors believes that Mr. Shabshab's extensive industry experience qualifies him to serve on our board of directors.

Kristin Caltrider has served as our Executive Vice President, Chief Financial Officer, and Corporate Treasurer since March 2022. Ms. Caltrider previously served as the Vice President of Finance at Quidel Corporation, a manufacturer of medical diagnostic products, since June 2014. Prior to her time as Vice President of Finance, Ms. Caltrider held various other roles at Quidel Corporation from May 2007 to June 2014, including Vice President of Financial Planning and Analysis, Senior Director of Financial Planning and Analysis, and Director of Financial Planning and Analysis. Prior to Quidel, Ms. Caltrider served as a Director of Finance at Life Technologies Corporation, a biotechnology company, from September 2003 to May 2007. Ms. Caltrider holds an MBA from the University of San Diego and a B.A. in Business Administration from California Lutheran University.

George Parr has served as our Executive Vice President and Chief Commercial Officer since April 2021. Most recently, Mr. Parr served as Executive Vice President & Chief Marketing Officer at Becton Dickinson and Company, a leading medical technology company, from November 2017 through January 2020. Previously, from 2014 to 2017, Mr. Parr served as Senior Vice President & Chief Marketing Officer at SIRVA Worldwide Relocation & Moving, a moving industry company. Prior to that, from 2006 to 2013, Mr. Parr served at Diversey, Inc., a cleaning and hygiene solutions company, as Senior Vice President & Chief Marketing Officer from 2010 to 2013 and Worldwide General Manager, Kitchen Hygiene & Fabric Care from 2006 to 2010. Prior to that, Mr. Parr served in various managing roles in consumer goods companies. Mr. Parr holds a MBA from DePaul University and a B.S. in Accounting from LaSalle University.

Dr. Stanislav Glezer has served as our Executive Vice President, Chief Technology Officer since October 2021, responsible for R&D and Engineering, Medical Affairs, and Regulatory Affairs. Dr. Glezer has also served as our Executive Vice President and Chief Medical Officer from June 2021 to October 2021. Previously, Dr. Glezer was with Becton, Dickinson and Company, a global medical technology company where he served as the Worldwide Vice President of Medical Affairs for Diabetes Care since September 2018 with Business Development responsibilities added under him since January 2021. Prior to joining Becton Dickinson, Dr. Glezer served as the Chief Medical Officer at Adocia S.A. a biotechnology company, from 2017 to 2018. From 2016 to 2017, Dr. Glezer served as Vice President of Global Medical Affairs at Novo Nordisk, Inc., a healthcare company. Earlier, Dr. Glezer served in a number of roles of progressively increasing seniority, including, Global Project Head for the largest late-stage pipeline asset, Vice President of Evidence and Value & Access, Vice President of Medical Affairs, and Senior Director of Medical Strategy & Operations, for Sanofi S.A., a multinational pharmaceutical company, from 2001 to 2015. Dr Glezer holds a doctor of medicine from Moscow State University of Medicine and Dentistry and a MBA from California Coast University.

Jason Somer has served as our Executive Vice President and General Counsel and Secretary since July 2021. Most recently, Mr. Somer served as head Legal Counsel at Invoca, Inc., a SaaS analytics company. Prior to his time at Invoca, Mr. Somer served as Associate General Counsel at Sunniva, Inc., and as General Counsel and Corporate Secretary for Innova Gaming Group, a gaming company. Prior to joining Innova, Mr. Somer served as the Senior Vice President of Business Development and General Counsel at Sunora Energy Solutions, a solar energy development company. Mr. Somer also previously served as the Vice President of Special Projects and the Senior Global Counsel at Suntech Power, a Shanghai-based solar energy technology company. Prior to joining Suntech Power, Mr. Somer served as Director of Legal Affairs & Business Development at Ironport Systems, Inc. and as Associate General Counsel and a Business Development Director of Neoforma, Inc. Mr. Somer joined Neoforma from Morrison & Foerster where he was a corporate/securities associate based in New York. Mr. Somer holds a L.L.M. from Boston University, a L.L.B from the University of British Columbia School of Law, and a B.Sc. from the University of Western Ontario in Biology/Pharmacology.

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.

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.

Risk factors include, but are not limited to, statements concerning the following:

Risks related to our business and strategy:

- the intense international, national, regional and local competition we face in our industry;
- our dependence on a limited number of customers for a significant portion of our sales revenue;
- our reliance on a single source or a limited group of manufacturers or suppliers;
- the lack of long-term supply contracts with many of our third-party suppliers;
- the possibility our manufacturing facilities could become unavailable or inoperable and other potential manufacturing problems or delays;
- our reliance upon a third-party contract manufacturer for certain manufacturing and repair operations;
- the need to continue to enhance our existing products and develop and market new products;
- risks associated with public health threats and epidemics, including the COVID-19 pandemic and related public health emergency (PHE);
- the competitive bidding process or other reimbursement policy changes under Medicare or other third-party payors, including recently enacted and potential future changes in the reimbursement rates or payment methodologies under Medicare, Medicaid and other government programs;
- healthcare reform measures;
- the complex and lengthy reimbursement process we depend upon for a significant portion of our revenue;
- potential failure to maintain or obtain new private payor contracts and future reductions in reimbursement rates from private payors;
- our ability to hire and retain highly qualified individuals;
- our ability to manage our anticipated growth effectively;
- potential acquisitions of, or investments in, other companies;
- our international sales and manufacturing activities;
- warranty or product liability claims or other litigation;
- increases in our operating costs;
- our dependence on the services of our senior executives and other key technical personnel;
- variance in our financial condition and results of operations; and
- the market opportunities for our products.

Risks related to the regulatory environment:

- extensive federal, state, and international regulations related to our business by numerous government agencies, including the U.S. Food and Drug Administration, or FDA and the European Medical Devices regulation;
- the potential need to seek additional clearances or approvals for our products; and
- potential FDA, state, or international regulatory enforcement action and other penalties.

Risks related to our intellectual property:

- our ability to secure and maintain patent or other intellectual property protection for the intellectual property used in our products;
- the possibility that any of our patents may be challenged, invalidated, circumvented or rendered unenforceable; and
- patent and other intellectual property litigation if our products infringe or appear to infringe the intellectual property rights of others.

Risks related to being a public company:

- increased costs as a result of operating as a public company and the substantial time our management will be required to devote to compliance initiatives and corporate governance practices; and
- our ability to maintain effective internal controls.

Risks related to our common stock:

- the volatility of the trading price of our common stock;
- the publication of research reports by securities or industry analysts;
- potential sales of a large number of shares of our common stock;
- anti-takeover provisions in our charter documents and under Delaware law; and
- our intention not to pay dividends for the foreseeable future.

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 is a highly competitive industry. We compete with a number of manufacturers and distributors of portable oxygen concentrators (POCs), 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, Gas Control Equipment (subsidiary of Colfax), Nidek Medical, 3B Medical, SysMed, and Belluscura. Given the relatively straightforward regulatory path in the oxygen therapy 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., Rotech Healthcare, Inc., and Viemed 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. In addition, providers may reduce or eliminate purchases from us due to our increased focus on building out a prescriber sales team and pursuing rentals directly,

which could be in competition with our providers in the United States. 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. Consequently, 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 to new or changing opportunities, technologies, standard regulatory and reimbursement development and customer requirements or changing or uncertain business conditions or macroeconomic trends, including supply chain challenges. 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, resellers, and charitable organizations. For the years ended December 31, 2022, 2021, and 2020, sales revenue to our top 10 customers accounted for approximately 30.5%, 27.4% and 29.0%, respectively, of our total revenue. Medicare's service reimbursement programs represented more than 10% of our total revenue for the years ended December 31, 2022 and 2021. One single customer represented more than 10% of our total revenue for the years ended December 31, 2020. 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. Moreover, in the second quarter of 2020 and continuing through the first quarter of 2021, we experienced a decline in total sales to business-to-business customers worldwide, which we believe was primarily due to the COVID-19 pandemic and related PHE. 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 in some cases components required to manufacture and assemble our products are available in only limited supplies from limited manufacturers or suppliers, and the partial or complete loss of one or more of

these manufacturers or suppliers or limitation on availability could cause significant production delays or stoppages, 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, and our Inogen At Home systems. For example, we have elected to source certain key components from single sources of supply, including our batteries, motors, valves, and some molded plastic components. Many of our products also utilize components that are available from a limited number of suppliers. Our dependence on single-source or limited-source suppliers of components may expose us to several risks, including, among other things:

•our suppliers or their component sub-suppliers may be unable to meet demands due to global supply chain disruptions;

•we may experience delays in delivery by our suppliers due to customs clearing delays, shipping delays, scarcity of raw materials and components 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 diseases, epidemics or other public health emergencies, including the COVID-19 pandemic and related PHE or due to acts of terrorism, hostilities, military conflict or war, including the war in Ukraine;

•we may not be able to find new or alternative components, even at elevated prices, or reconfigure our system and manufacturing processes in a timely manner if the necessary components become unavailable, which could lead to a production slowdown or temporary stoppage;

•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, cause delays in supplying of our products to our customers, or result in regulatory enforcement against us or our suppliers;

•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, trade restrictions or barriers or other government actions that impact our ability to obtain such components;

•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; and

•our suppliers may wish to discontinue supplying components or services to us.

We have experienced supply problems with one or more of our suppliers and may again experience supply problems in the future. For example, we saw supply chain disruptions in the second half of 2021 and 2022, and believe we may continue to see such disruptions in 2023, primarily associated with semiconductor chips used in our batteries and printed circuit boards. However, we recognize that there could be supply shortages for other components used in our products. While we have taken steps to attempt to mitigate the impact of potential supply shortages, the previously experience shortages have had and any future shortage may have a negative impact on our ability to manufacture products (including with respect to the production halt discussed below) as these chips are used across all of our portable oxygen concentrators in our batteries and printed circuit boards.

The inflated costs related to the supply shortage negatively impacted our cost of goods sold in the third and fourth quarter of 2021 and 2022 even though we paid significant costs in the second half of 2021 and throughout 2022 associated with these chips, most of these costs increased our prepaid expense and inventory given that these components were either not yet delivered or not yet sold in finished products during the period. While we have seen improvement in semiconductors in the beginning of 2023, we expect availability issues to continue into 2023. In addition, the uncertainty related to COVID-19 extended lockdowns in China could further impact our operations in 2023 as it relates to manufacturing and finishing of semiconductors. As a result of the semiconductor chip shortages, we temporarily suspended manufacturing operations at our Texas and California locations from January 3, 2022 to February 7, 2022 and Foxconn, our Czech Republic-based original equipment manufacturer (OEM), suspended manufacturing due to the same supply constraints from January 3, 2022 to February 9, 2022. We have attempted to mitigate the impact through forward buying of critical components on the open market, but it has and could continue to negatively impact our ability to manufacture product, and we could be forced to slowdown or temporarily halt production again. This may mean that some of our customers have decided or may decide to seek other sources of products if we cannot meet their demand.

The FDA has released guidance that requires manufacturers of certain medical devices, including ventilation-related products under product code CAW, among others, to notify FDA of a permanent discontinuance or interruption in manufacturing of an applicable device under Section 506J of the Federal Food, Drug, and Cosmetic Act during the COVID-19 PHE. To the extent we experience an interruption in our manufacturing during the COVID-19 PHE that falls within the scope of this guidance, we would be required to notify FDA. This and other regulatory requirements could increase the cost of our operations and compliance.

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 constitute a material modification or require a redesign of our products and, potentially, require additional FDA clearance or approval before we could use any materially modified or 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.

The ongoing conflict between Russia and Ukraine as well as implications of supply chain challenges may adversely affect our business and results of operations. It is not possible to predict the implications of this conflict, which could also include, without limitation, further sanctions, uncertainty about economic and political stability, increases in inflation rate and energy prices, increased threat of cyberattacks, supply shortages, and adverse effects on currency exchange rates and financial markets. The war in Ukraine has adversely affected some shipping pathways and we anticipate that this conflict may result in disruptions to our supply chain and shipping channels. We are continuing to monitor the situation in Ukraine and globally as well as assess its potential impact on our business. A significant escalation or further expansion of the conflict's current scope or related disruptions to the supply chain could have a material adverse effect on our business, financial condition, and results of operations.

If we are unable to continue to enhance our existing products, develop or acquire and market our 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, acquire companies with new or different products, sell our existing products, and develop new innovative products ourselves. Product development requires significant financial, technological and other resources. While we expended $21.9 million, $16.6 million and $14.1 million for the years ended December 31, 2022, 2021, and 2020, 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.

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 for example the Rove 6 that we launched in Europe in December 2022, 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, 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.

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 be set, in part, to federal and state government budgetary constraints. As a result, with respect to Medicare and Medicaid related revenue, we may not be able to offset the effects of general inflation on our operating costs through increases in prices for our products, as these inflation adjustments are subject to annual approval outside of our control. 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 has resulted in increased labor costs, which we saw in 2022 and expect to continue to see in 2023 as the labor market has tightened and there is increased competition for certain roles. As a result, increases in our operating costs including personnel-related costs could adversely affect our financial condition and results of operations.

An economic recession, downturn, period of inflation, or economic uncertainty in our key markets may adversely affect customer and consumer spending as well as demand for our products.

Global economic conditions are uncertain and volatile, due in part to the impacts of COVID-19 and its continued influence on business models and market dynamics around the globe. Such impacts potentially include the potential impacts of increasing inflation, geopolitical uncertainties, and any sanctions, restrictions or responses to those conditions. As global economic conditions continue to be volatile or economic uncertainty remains, trends in consumer spending also remain unpredictable and subject to reductions due to credit constraints and uncertainties about the future. Unfavorable economic conditions may lead customers and consumers to delay or reduce purchases of our products. Consumer demand for our products may not reach our targets, or may decline, when there is an economic downturn or economic uncertainty in our key markets. Our sensitivity to economic cycles and any related fluctuation in customer and consumer demand could have a material adverse effect on our business, financial condition, and results of operations.

We are subject to risks associated with public health threats and epidemics, including the COVID-19 pandemic and related PHE.

Public health outbreaks, epidemics, pandemics of contagious or infectious diseases, such as COVID-19, may significantly disrupt our business. Such outbreaks pose the risk that we or our employees, contractors, suppliers, or other partners may be prevented from conducting business activities for an indefinite period of time due to spread of the disease, or due to shutdowns that may be requested or mandated by federal, state and local governmental authorities. Business disruptions could include disruptions or restrictions on our ability to travel, as well as temporary closures of our facilities or the facilities of our contractors, suppliers, and other partners. For example, we previously experienced declines in total business-to-business demand during portions of the COVID-19 pandemic and related PHE, which we believe were due to these factors and other factors related to the COVID-19 pandemic and related PHE. Additionally, new variants of COVID-19 could prove to be deadlier or more transmittable, or the developed vaccines may be ineffective versus these new variants, which could result in further business disruptions that could negatively impact our business and financial results.

In addition, while we and our contract manufacturer have been able to keep our manufacturing facilities open during the COVID-19 pandemic and related PHE, there can be no assurance that we would be able to keep such facilities open indefinitely during a future public health emergency.

While the extent of the impact of the COVID-19 pandemic and related PHE on our business and financial results remains uncertain, we were negatively impacted by portions of the COVID-19 pandemic and related PHE and a continued or new public health crisis in the future could have a further material negative impact on our business, financial condition, and result of operations. Even after the COVID-19 pandemic and related PHE have subsided, we may continue to experience materially adverse impacts on our financial condition and our results of operations and many of our known risks described in this Annual Report on Form 10-K may be heightened.

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. For example, our batteries and motherboards are sourced from a single source supplier, and sub-components of the battery are also sourced from single source suppliers. We are experiencing limited availability of certain semiconductor chip components for our Inogen One portable oxygen concentrators in both its batteries and printed circuit boards, and we do not have long-term supply contracts that would guarantee our supply during these periods of higher demand and lower availability of these sub-components. This has led to orders not being filled in a timely manner and a temporary production halt in the first quarter of 2022 and has led to increased costs for components and limited supply availability through 2022, which we expect to continue in 2023. For additional discussion of potential risks related to our inability to source components of our products, 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 in some cases those components are available in only limited supplies from limited manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays or stoppages, an inability to meet customer demand, substantial loss in revenue, and an adverse effect on our financial condition and results of operations.*"

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. 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 HME 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 9.2% as of December 31, 2022 and 8.0% as of December 31, 2021. 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, 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.

•There have been significant U.S. reimbursement and policy changes associated with the COVID-19 PHE that impact oxygen therapy and other durable medical equipment. The CARES Act allows HHS to waive certain Medicare telehealth payment requirements during the COVID-19 PHE declared by HHS on January 31, 2020 to allow beneficiaries in all areas to receive telehealth services, including at their home, starting March 6, 2020. The Coronavirus Preparedness and Response Supplemental Appropriations Act (H.R. 6074) also granted HHS the authority to waive certain requirements with respect to telehealth services. Under this authority, CMS clarified that HHS would not conduct audits to determine whether there was a prior physician-patient relationship for telehealth claims submitted during the COVID-19 PHE. The CARES Act, passed on March 27, 2020, included the extension of the 50/50 blended rate for HME in rural and non-contiguous, non-competitively bid areas and established a new 75/25 blended rate for all other non-competitively bid areas through the duration of the COVID-19 PHE. The 75/25 blended rate was retroactive to March 6, 2020. The PHE is currently scheduled to expire on May 11, 2023. The Coronavirus Preparedness and Response Supplemental Appropriations Act extended the 75/25 blended rates for all other non-competitively bid areas until December 31, 2023.

•In May 2020, Congress eliminated the 2% Medicare sequestration payment reduction that applies to all Medicare providers and suppliers, due to the COVID-19 PHE, and Congress extended it until March 31, 2022. The sequestration payment reduction resumed with a 1% reduction to rates from April 1, 2022 until June 30, 2022, with the full 2% Medicare sequestration having resumed on July 1, 2022.

•In addition, the CARES Act established a provider relief fund of $100 billion for Medicare providers and suppliers to prevent, prepare for, and respond to the COVID-19 PHE, and as a Medicare supplier we also received funds of $6.2 million in the second quarter of 2020. The Paycheck Protection Program and Heath Care Enhancement Act was also signed into law on April 24, 2020 and provides additional funding of $484 billion to programs enacted under the CARES Act. Of the $484 billion, $75 billion is additional funding for healthcare providers to reimburse healthcare related expenses and lost revenues attributable to COVID-19 PHE, which is in addition to the $100 billion approved in the CARES Act.

•On April 6, 2020, CMS issued an Interim Final Rule (IFR) in the Federal Register for policy and regulatory revisions in response to the COVID-19 PHE. This IFR included that for the duration of the COVID-19 PHE, the face-to-face requirements and clinical indications of coverage for home oxygen, among other respiratory products, will be waived.

•The Trump administration also issued a number of regulatory waivers to increase the flexibility in durable medical equipment, prosthetics, orthotics and supplies (DMEPOS) suppliers' ability to service patients quickly and without the normal requirements. For example, the patient signature for proof of delivery for DMEPOS is waived when signatures cannot be collected during the COVID-19 PHE for dates of services within the PHE. In addition, CMS increased Medicare contractors' ability to waive replacement product requirements, paused the national prior authorization program for certain DMEPOS, automatically extended expiring accreditations, granted contractors the flexibility to grant appeals extensions, and suspended medical review of claims. Both the IFR and temporary regulatory changes show significant flexibility from CMS to improve access for oxygen and other DMEPOS items during this COVID-19 PHE. These changes were retroactive to early March 2020. In August 2020, CMS resumed medical review of claims and the prior authorization program for certain DMEPOS.

•CMS also issued a final rule in December 2021 (CMS-1738-P) to establish payment amounts that will be effective after the COVID-19 PHE for DMEPOS products and services covered under Medicare. We believe that Medicare rates will not change for the length of the COVID-19 PHE, except for any net change for inflation and sequestration, as outlined above.

CMS established three different fee schedule adjustment methodologies for non-CBAs after the termination of the COVID-19 PHE: (1) for non-contiguous non-CBAs; (2) for contiguous non-CBAs defined as rural areas; and (3) for non-rural non-CBAs within the contiguous United States. Payment methodologies (1) and (2) contemplate utilizing the 50/50 blended rates as a permanent construct, but payment methodology (3) contemplates setting the fee schedule amounts to 100% of the Medicare rates that are based upon (former) competitive bid rates. This will reduce Medicare rates after the PHE is over in the current areas that are considered non-rural but not covered by a former CBA, as those areas are currently receiving a 75/25 blended reimbursement rate.

•In January 2021, CMS announced, for informational purposes only, the payment amounts that would have been effective for the competitive bidding round 2021 as part of its effort to increase transparency into the DMEPOS Competitive Bidding Program. As a reminder, the bids for oxygen were based on the Healthcare Common Procedure Coding System (HCPCS) code E1390, which is for stationary oxygen, and there were 130 regions bid. The simple average of the 2018 payment amounts for these regions for this code was $73.98. The simple average of the payment amounts for these regions for this code was $122.61, or an average increase of 65.7%. If CMS were to have implemented these rate changes, the simple average payment amounts in these regions for POCs (codes E1390 and E1392) would have been $157.60, which is significantly higher than the simple average payment amounts of $110.07 and $121.07 per month being paid as of January 1, 2021 and April 1, 2021 for these regions.

•In September 2021, CMS published a Decision Memo which revised the Home Use of Oxygen national coverage determination and removed the national coverage determination for Home Oxygen Use to Treat Cluster Headaches. This will allow the Medicare Administrative Contractors to make coverage determinations regarding the use of home oxygen and oxygen equipment for cluster headaches. CMS also expanded patient access to oxygen and oxygen equipment in the home by allowing oxygen use for acute or short-term needs instead of limiting coverage to chronic hypoxemia, removed the requirements for alternative treatment measures before dispensing of oxygen therapy, and removed the limited list of conditions for which oxygen may be covered to respiratory-related diseases, to allow the physician flexibility to make that determination. In addition, CMS defined exercise more broadly to include functional performance of the patient and allow more flexibility on pulse oximetry readings to account for differences in skin pigmentation. Lastly, CMS reduced provider burden by removing the oxygen certificate of medical necessity requirement. We believe these changes will expand coverage for patients who would benefit from oxygen therapy, reduce administrative burdens, and give more decision-making authority on proper patient care to the physicians. CMS delayed the implementation date for the revised national coverage determination until January 3, 2023. However, we do not yet have visibility on the details of how the Medicare Administrative Contractors will change their coverage determinations.

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

On March 11, 2021, the American Rescue Plan Act of 2021 (ARP) became federal law. The ARP, among other things, increased spending without offsets to other federal programs. The Statutory Pay-as-You-Go (PAYGO) Act of 2010 requires deficit neutrality overall in the laws enacted by Congress and imposes automatic spending reductions at the end of the year if such laws increase the deficit when they are added together. Any legislation enacted after February 12, 2010, that affects direct spending and/or revenues is subject to Statutory PAYGO. The Congressional Budget Office previously estimated that a Statutory PAYGO sequester in fiscal year 2022 resulting from the ARP passage would cause a 4% reduction in Medicare spending. In December 2021, Congress deferred action on waiving Statutory PAYGO and has delayed implementation of this payment reduction until 2023. On December 29, 2022, the Consolidated Appropriations Act of 2022 (Pub. L.) was signed into law. Included in this law was a provision deferring for two years, until January 1, 2025, the Statutory PAYGO Medicare payment reductions. We cannot currently determine if, or to what extent, our business, results of operations, financial condition or liquidity will ultimately be impacted by mandated sequestration triggers under the PAYGO Act, or if or when the mandated sequestration will occur. Medicare's service reimbursement programs accounted for 77.0%, 81.9% and 81.5% of rental revenue for the years ended December 31, 2022, 2021 and 2020, respectively, and based on total revenue were 11.6%, 10.6% and 7.5% for the years ended December 31, 2022, 2021 and 2020, respectively.

The HHS Office of Inspector General (OIG) has recommended that states 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.

The competitive bidding process or other reimbursement policy changes under Medicare or other third-party payors 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.

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, 2022, approximately 77.0% 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 former competitive bidding areas (CBAs) in the prior six years are outlined in the table below for E1390 and E1392, which are the two primary codes that we bill to Medicare and other payors for our oxygen product rentals. These rates are typically updated annually each January as they are subject to Consumer Price Index (CPI) and sequestration adjustments, but can also be subject to adjustments during the year due to legislative rulings. Competitive bidding contracts were scheduled to go into effect on January 1, 2021; however, on October 27, 2020, CMS announced that competitive bidding contracts would not be awarded for most product categories, including oxygen, due to the payment amounts not achieving the expected savings and the current COVID-19 pandemic and related PHE. Effective April 1, 2021, rates were adjusted to remove a percentage reduction that was put in place to meet the budget neutrality requirement previously mandated by section 1834(a)(9)(D)(ii) of the Social Security Act. See the table below for average Medicare rates in former CBAs, using a simple average of rates in each CBA.

Average Medicare reimbursement rates in former CBAs	**E1390**	**E1392**
As of January 1, 2023	$ 90.77	$ 44.49
As of January 1, 2022	$ 85.31	$ 41.81
As of April 1, 2021	$ 81.25	$ 39.82
As of January 1, 2021	$ 73.88	$ 36.20
As of January 1, 2020	$ 73.98	$ 36.25
As of January 1, 2019	$ 72.92	$ 35.72
As of January 1, 2018	$ 77.03	$ 36.06

CMS also issued a final rule in December 2021 (CMS-1738-P) to establish payment methodologies that will be effective after the COVID-19 PHE for DMEPOS products and services covered under Medicare. We believe that Medicare rates will not change for the length of the PHE, except for inflation and sequestration adjustments that typically occur annually each January but have not yet been announced.

CMS established three different fee schedule adjustment methodologies for non-CBAs after the termination of the COVID-19 PHE: (1) for non-contiguous non-CBAs; (2) for contiguous non-CBAs defined as rural areas; and (3) for non-rural non-CBAs within the contiguous United States. The final payment methodology sets the fee schedule amounts to 100% of the Medicare rates in all non-rural areas. This will reduce Medicare rates after the PHE is over in the current areas that are considered non-rural but not covered by a former CBA, as those areas are currently receiving a 75/25 blended reimbursement rate.

In January 2021, CMS announced what would have been the payment amounts for the competitive bidding round 2021. As a reminder, the bids for oxygen were based on the HCPCS code E1390, which is for stationary oxygen, and there were 130 regions bid. The simple average of the 2018 single payment amounts for these regions for this code was $73.98. The simple average of the payment amounts for these regions for this code was $122.61, or an average increase of 65.7%. If CMS were to have implemented these rate changes, the average payment amounts in these regions for POCS (codes E1390 and E1392) would have been $157.60, which is significantly higher than the $110.07 per month being paid as of January 1, 2021.

Medicare payment rates are based upon whether the beneficiary resides in a (former) CBA, or in a rural or non-rural non-CBA, or in non-contiguous states. Non-CBA payment rates are based on regional pricing, that are derived from former competitive bidding payment rates. In rural areas and non-contiguous states, payment rates are based on a higher 50-50 blended rate, to account for higher

servicing costs in those areas. We estimate that approximately 18% of our patients are eligible to receive the higher reimbursement rates based on the geographic locations of our current patient population. Effective March 1, 2021, CMS announced that the rates as of January 1, 2021 were incorrectly calculated, and retroactively adjusted the rates, which are reflected in the table below. The Medicare rates announced previously were a simple average of $136.24 for HCPCS code E1390 and $44.69 for HCPCS code E1392, which were increased to $136.84 and $44.99, respectively. Effective April 1, 2021, rates were adjusted to remove a percentage reduction that was put in place to meet the budget neutrality requirement previously mandated by section 1834(a)(9)(D)(ii) of the Social Security Act. See the table below for average Medicare rates in rural areas, using a simple average of rates in each state.

Average Medicare reimbursement rates in rural areas	**E1390**	**E1392**
As of January 1, 2023	$ 164.48	$ 50.44
As of January 1, 2022	$ 151.15	$ 48.39
As of April 1, 2021	$ 143.48	$ 47.13
As of January 1, 2021	$ 136.84	$ 44.99
As of January 1, 2020	$ 136.71	$ 44.93
As of January 1, 2019	$ 134.71	$ 44.32
As of January 1, 2018	$ 76.31	$ 41.91

Rates in non-former CBAs that are not defined as rural are set based on the rates in former CBAs. See the table below for average Medicare rates in these non-former CBAs, non-rural areas, using a simple average of rates in each state. These rates are typically updated annually each January as they are subject to the Consumer Price Index (CPI) and sequestration adjustments but are also subject to adjustments during the year due to legislative rulings. Effective April 1, 2021, rates were adjusted to remove a percentage reduction that was put in place to meet the budget neutrality requirement previously mandated by section 1834(a)(9)(D)(ii) of the Social Security Act. Note that the 2021 rates listed below include CARES Act increased rates due to the COVID-19 PHE, which may not be in place for all of 2022. Once the Administration ends the COVID-19 PHE, the rates in these non-former CBAs, non-rural areas are expected to adjust down to the former CBA rates listed in the table above.

Average Medicare reimbursement rates in non-former CBAs, non-rural areas	**E1390**	**E1392**
As of January 1, 2023	$ 125.41	$ 46.49
As of January 1, 2022	$ 115.14	$ 43.69
As of April 1, 2021	$ 109.39	$ 42.12
As of January 1, 2021 (retroactively revised March 1, 2021)	$ 104.07	$ 40.06
As of January 1, 2020	$ 74.84	$ 36.87
As of January 1, 2019	$ 72.32	$ 35.64
As of January 1, 2018	$ 69.31	$ 38.10

CMS is required to conduct future rounds of competitive bidding, which could reduce reimbursement rates, negatively impact the premium for POCs over other oxygen modalities, or limit beneficiary access to our technologies. 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, 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 15.0% of our total revenue in the year ended December 31, 2022 and 10.6% in the year ended December 31, 2021.

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, 2022 and December 31, 2021. Our capped patients as a percentage of total patients on service was approximately 9.2% as of December 31, 2022 and 8.0% as of December 31, 2021. 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 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, and we can deploy used assets in working order as long as the prescription requirements are met. We must also procure a renewal 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.

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.

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

The home medical equipment market is highly competitive and our products face significant competition from other well established manufacturers. Numerous initiatives and reforms instituted by legislators, regulators and third-party payors to reduce home medical equipment costs have caused pricing pressures which have resulted in a consolidation trend in the home medical equipment industry as well as among the company's customers, including home healthcare providers. In the past, some of our competitors, which may include distributors, have been lowering the purchase prices of their products in an effort to attract customers. This in turn has resulted in greater pricing pressures, including pressure to offer customers more competitive pricing terms, exclusion of products from or unfavorable position on provider formularies and the exclusion of certain suppliers from important market segments as group purchasing organizations, independent delivery networks and large single accounts continue to consolidate purchasing decisions for some of the company's customers. Further consolidation could result in a loss of customers, increased collectability risks, or increased competitive pricing pressures.

Healthcare reform measures may have a material adverse effect on our business 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 substantially changed healthcare financing by both governmental and private insurers, and significantly impacts 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 sequestration 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 2030 unless additional Congressional action is taken. For example, a provision in the CARES Act and subsequent federal laws had paused the 2% Medicare sequestration reduction for claims dated from May 1, 2020 through March 31, 2022. Starting April 1, 2022, and through June 30, 2022, there was a 1% sequestration reduction, and the full 2% sequestration reduction resumed on July 1, 2022. We expect that additional state and federal healthcare policy 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 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. We regularly monitor developments in state requirements applicable to our business and their impact on our operations, products and access to patients. Some states have already enacted legislation that regulate in-state facilities. 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, legislative actions and judicial decisions. 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, 2022, 2021 and 2020, approximately 15.0%, 12.9% and 9.2%, 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 which would 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 Plano, Texas and Goleta, California and through our contract manufacturer in the Czech Republic. 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 are in areas that have and may in the future be harmed or rendered inoperable by natural or man-made disasters, including, but not limited to, the COVID-19 pandemic and related PHE related facility shutdowns, 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.

We utilize a third-party contract manufacturer located in the Czech Republic for production of a portion of our Inogen One G3 and Inogen One G5 concentrators and for repair services for these products. Since 2018, our contract manufacturer has produced the vast majority of the concentrators required to support our European demand and we expect this to continue in 2023. 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 and the COVID-19 pandemic and related PHE;
- 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 33% 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.

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.

Additionally, while we believe that our investments in the prescriber sales organization, especially through Ashfield, our contract sales organization, will enhance our growth in direct-to-consumer sales and rental revenue, it will take time for these sales representatives to be fully trained and ramped up to full productivity, and it will take time for the sales tools to be implemented across our existing prescriber sales representatives. To the extent that the sales tools being implemented, or the sales representatives hired either through us or Ashfield are not effective or our relationship with Ashfield was to terminate, or the number of sales representatives does not reach the number anticipated, it may negatively affect our future growth and results of operations.

We have also experienced increased demand for our products in certain markets in certain periods of time, particularly during portions of the COVID-19 pandemic. If such demand increases resume or recur and we are unable to meet such demand due to supply constraints or other limitations, we may lose market share to competitors or lose customers, which may negatively affect our financial condition and results of operations. Furthermore, if demand and sales increase, and we meet that increase through an increase in our business-to-business sales mix, it may negatively impact our gross margin as HME provider purchases have a significantly lower average selling price that direct-to-consumer purchases.

During 2019, we signed leases to expand our facilities located in Plano, Texas and Goleta, California, which commenced in 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 and perform product repairs, is expected to be sufficient to meet our manufacturing needs provided that these facilities remain operational. However, our anticipated growth may 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 New Aera in 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. 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 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.

For example, as part of our ongoing efforts to advance patient preference and maintain our technology leadership position, we acquired New Aera in 2019. We made certain assumptions relating to the New Aera acquisition, which assumptions have proven to be inaccurate, including the failure to realize the expected benefits of the acquisition, failure to realize expected revenue, higher than expected operating costs, and general economic and business conditions that adversely affected the combined company following the acquisition. On December 19, 2022, we determined to dispose of the technology intangible assets previously acquired from New Aera related to the TAV technology by ceasing development of such assets and abandoning the TAV program (the "Disposal Determination"). We made the Disposal Determination based on our assessment that continued development of the assets would not be economically feasible. The assessment considered many factors, including 1) the lack of compatibility and functionality of the technology intangible asset within our existing product portfolio, 2) the lack of commercial potential of such products that were not approved for ventilation Medicare reimbursement and a negative litigation outcome that occurred subsequent to the approved HCPCS code process, and 3) the substantial additional investment that would be required in order to attempt to achieve any commercial potential with substantial risk that no benefit would ever be achievable.

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 single customers each represented more than 10% of our net accounts receivable balance with accounts receivable balances of $22.6 million and $9.9 million, respectively, as of December 31, 2022, and one single customer and Medicare each represented more than 10% of our net accounts receivable balance with accounts receivable balances of $5.9 million and $2.7 million, respectively, as of December 31, 2021. Challenging economic conditions, including those associated with the recent recessionary effects and inflationary pressure, 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 potential worsening global economic conditions or the recent disruptions to, and volatility in, the credit and financial markets in the United States and worldwide, the COVID-19 pandemic and related PHE, the war in Ukraine, potential uncertainty related to Taiwan and its relationship with China or other events affecting the United States or global economy. 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, 2022, 2021 and 2020, approximately 26.8%, 22.2% and 20.1%, 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 and data protection 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, including as a result of recessionary effects or inflationary pressures;
- 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;
- any other government actions, by the United States, China or other countries, that impose barriers or restrictions that would impact our ability to sell or ship products to customers; 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, adverse consequences concerning the United Kingdom's exit from the European Union (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 portion 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, 2022 and 2021, we experienced net foreign currency losses of $0.8 million and $0.7 million, respectively, and for the year ended December 31, 2020 we experienced a net foreign currency gain of $0.6 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 this Annual Report on Form 10-K for the year ended December 31, 2022. Additional information on our hedging arrangements is also contained in Note 3 – Fair value measurements and Item 3 – Quantitative and Qualitative Disclosures About Market Risk in the notes in our 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, and anti-corruption, 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 and anti-money-laundering laws 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 fifty-nine countries around the world where we have conducted activities and have sold 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, agents, representatives, business partners, and third-party intermediaries, such as distributors or resellers, from authorizing, offering or providing, directly or indirectly, improper payments or benefits to recipients in the public or private-sector.

We leverage various third parties to sell our products and conduct our business abroad. We, our employees, agents, representatives, business partners, and third-party intermediaries 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 employees, agents, representatives, business partners and third-party intermediaries, 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 cannot assure you that all of our employees, agents, representatives, business partners or third-party intermediaries 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.

These laws also require that we keep accurate books and records and maintain internal controls and compliance procedures designed to prevent any such actions. While we have policies and procedures to address compliance with such laws, and while we provide training to all employees, including management, to ensure compliance with the FCPA and other applicable anti-bribery and anti-corruption laws, we cannot assure you that none of our employees, agents, representatives, business partners or third-party intermediaries will take actions in violation of our policies and applicable law, for which we 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,

settlements, prosecutions, enforcement action, fines, damages, loss of export privileges and suspension or debarment from government contracts, which could have a material and adverse effect on our reputation, business, operating results and prospects. In addition, responding to any allegation, 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.

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. Our President and Chief Executive Officer, Nabil Shabshab, joined us in February 2021, our Executive Vice President, Chief Commercial Officer, George Parr, joined us in April 2021, our Executive Vice President, Chief Technology Officer, Stanislav Glezer, joined us in June 2021, our Executive Vice President, General Counsel, Jason Somer, joined us in July 2021, and our Executive Vice President, Chief Financial Officer, Kristin Caltrider, joined us in March 2022.

If experienced employees leave, we could experience inefficiencies or a lack of business continuity due to loss of historical knowledge and a lack of familiarity of the new employees with business processes, operating requirements, policies and procedures. It is important to our success that these key employees quickly adapt to and excel in their new roles. If they are unable to do so, our business and financial results could be materially adversely affected. In addition, 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 have experienced increased turnover at all levels since the start of the COVID-19 pandemic and general labor shortages in various areas of our business, all of which could have a material adverse impact on our business. For example, we have been challenged in our ability to hire qualified sales professionals in our direct-to-consumer sales force during this time. We may need to increase employee wages and benefits in order to attract and retain the personnel necessary to achieve our goals, and our business, operations, and financial results may suffer if we are unable to do so. In addition, the value to employees of equity awards that vest over time may be significantly affected by decreases in our stock price that are beyond our control and may at any time be insufficient to counteract more lucrative offers from other companies. We may face challenges in retaining and recruiting such individuals due to sustained declines in our stock price that could reduce the retention value of equity awards. 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, certain of which are operated by third parties on which we rely, to process, transmit and store electronic, customer, operational, compliance, and financial information; to coordinate and otherwise operate 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, ransomware, and other malware, 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 or those provided by our third-party service providers and vendors 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 other proceedings 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, corruption, unavailability, or other unauthorized processing. There is no assurance that we will not experience service interruptions, security breaches, cybersecurity risks and data security incidents, or other information technology failures, whether suffered by us or third parties on which we rely, in the future.

Due to the COVID-19 pandemic and related PHE, we allowed an increased number of employees to work remotely, and we continue to do so and expect that this hybrid model of work will continue. As a result, we may have increased cybersecurity or data security risks, due to increased use of home wi-fi networks and virtual private networks, as well as increased disbursement of physical machines. While we implement IT controls to reduce the risk of a cybersecurity and data security breach, there is no guarantee that these measures will be adequate to safeguard all systems with an increased number of employees working remotely.

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, or the perception that any of these has occurred, could result in legal claims and proceedings, initiated by private parties, investigations or other proceedings by regulatory authorities, and liability or regulatory penalties, 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 and data protection 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 General Data Protection Regulation (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, and any such event, or the perception it has occurred, may result in claims and litigation by private parties, investigations and other proceedings against us 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 and data protection 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, and in certain cases enacted, privacy legislation imposing operational requirements on U.S. companies similar to the requirements reflected in the GDPR. For example, California has passed the California Consumer Privacy Act (CCPA), which went into effect on January 1, 2020, and among other things, requires new disclosures to California consumers and affords such consumers new abilities to opt out of certain sales of personal information. The CCPA provides civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. In addition, California voters recently passed the California Privacy Rights Act (CPRA), which modified the CCPA significantly as of January 1, 2023, potentially resulting in further uncertainty and requiring us to incur additional costs and expenses in an effort to comply. In addition, several states within the United States have enacted or proposed data privacy laws. For example, Virginia passed the Consumer Data Protection Act, Colorado passed the Colorado Privacy Act, Utah passed the Utah Consumer Privacy Act, and Connecticut enacted similar legislation. It is possible that these laws and regulations may be interpreted and applied in a manner that is inconsistent with our practices. If so, this could result in government-imposed fines or orders requiring that we change our practices, which could adversely affect our business. Aspects of these laws, and their interpretation and enforcement, remain uncertain. Their effects potentially are far-reaching and may restrict our ability to use personal information in connection with our business operations, require us to modify our data processing practices and policies and incur substantial compliance-related costs and expenses. Congress also 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 POC 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.

In particular, due to the COVID-19 pandemic and related PHE, we have seen a disruption in our normal seasonal trends, as, due to the mandates and behaviors emanating from the COVID-19 pandemic and related PHE, including shelter-in-place orders, reduced travel, and lower consumer confidence, we did not see the typical seasonal increases in direct-to-consumer sales in 2020, 2021 and 2022 that we have seen in prior years. As more HME providers adopt POCs 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 (loss) 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.

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 market, both in the United States and internationally, (ii) the size and percentage of the long-term oxygen therapy market that is subject to competitive bidding in the United States, (iii) the number of oxygen therapy 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 market 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 POC penetration increases, (viii) the share of POCs as a percentage of the total oxygen therapy spend, and (ix) the impact of the COVID-19 pandemic and related PHE on our business and our markets generally 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 the type of long-term oxygen therapy patients. The COVID-19 pandemic and related PHE may also reduce the number of oxygen therapy patients worldwide due to the higher risk of mortality of elderly patients with existing respiratory diseases if they are exposed to the virus. 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 or change in U.S. tax laws 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. We believe that our sales of concentrators and accessories may be subject to sales and use tax in certain states, but that there are exemptions from sales and use tax in most states. There can be no assurance, however, that these states would 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 (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 (FASB) is currently working together with the International Accounting Standards Board (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 recognize the benefits of deferred tax assets is dependent on future cash flows and taxable income.

We recognize the expected future tax benefit from deferred tax assets when the tax benefit is considered to be more likely than not of being realized; otherwise, a valuation allowance is applied against deferred tax assets. Assessing the recoverability of deferred tax assets requires management to make significant estimates related to expectations of future taxable income. Estimates of future taxable income are based on forecasted cash flows from operations and the application of existing tax laws in each jurisdiction. To the extent that future cash flows and taxable income differ significantly from estimates, our ability to realize the deferred tax assets could be impacted. In the future, our estimates could change requiring a valuation allowance or impairment of our deferred tax assets. Additionally, limitations under federal or state law could impact our ability to use our deferred tax assets. Finally, future changes in tax laws could limit our ability to obtain the future tax benefits represented by our deferred tax assets. See Note 6 – Income taxes in the notes of our consolidated financial statements in this Annual Report on Form 10-K for additional information and factors that could impact the Company's ability to realize the deferred tax assets.

The adoption and interpretation of new tax legislation, tax rulings, or exposure to additional tax liabilities, could materially affect our financial condition, results of operations, and cash flows.

We are subject to income and other taxes in the U.S. and other foreign jurisdictions in which we do business. As a result, our provision for income taxes is derived from a combination of applicable tax rates in the various places we operate. Significant judgment is required for calculating our income tax provision.

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, the Tax Cuts & Jobs Act of 2017 eliminated the option to deduct research and development expenditures currently and instead required taxpayers to capitalize and amortize them over five or fifteen years beginning in 2022. The Inflation Reduction Act of 2022 imposed a 1% excise tax on certain repurchases of stock. Such

changes may have a significant impact on our deferred tax assets, income tax provision and effective tax rate. Proposed legislation before the Administration and Congress may make further changes to the U.S. tax law. 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. Changes to existing tax law in the U.S. or other foreign jurisdictions could adversely affect our 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% sequestration reduction in Medicare payments, 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 was scheduled to continue until further notice. However, a provision in the CARES Act temporarily paused the 2% Medicare sequestration reduction for claims dated from May 1, 2020 through December 31, 2020 and the CARES Act also extended the end date of the Medicare sequestration reduction by one year, through 2030, in order to offset the 2020 suspension. The Consolidated Appropriations Act of 2021 was signed into law on December 27, 2020 and extended the suspension period to March 31, 2021. U.S. House of Representatives bill H.R. 1868 was signed into law on April 14, 2021 and extended the suspension period to December 31, 2021, but increased the fiscal year 2030 sequestration cuts. In December 2021 through the Protecting Medicare and American Farmers from Sequester Cuts Act, the 2% Medicare sequestration benefit that was set to expire December 31, 2021 was extended through March 31, 2022. The sequestration then resumed with a 1% reduction to rates from April 1, 2022 until June 30, 2022, with the full 2% Medicare sequestration then resumed effective July 1, 2022.

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 DMEPOS that the agency characterizes as “frequently subject to unnecessary utilization” and that have an average purchase fee of $1,000 or greater, or an average rental fee schedule of $100 or greater. 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 (code E1390) was included on the master list, but was later removed. On April 22, 2019, stationary oxygen (E1390) was again added to the list of potential codes that could be subject to PA. On November 8, 2019, CMS revised the criteria for inclusion on the master list and added 212 DMEPOS items, including portable oxygen concentrators (E1392), to the master list. 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 selects 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.

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 practice 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 audits and obtain information from healthcare providers.

Violations of federal and state laws or 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 and such approvals may be revoked or revised if an agency like the FDA believes it necessary.

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, 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, depending on the specific action, could cause the majority of our sales to decline or cease altogether. 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 subject to 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 such modified products.

Any modification we make to our products that could significantly affect their safety or effectiveness, or would constitute a material 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. We plan to make similar determinations regarding modifications to our 510(k) products, which may include the redesign of the G5 System motherboard pending validation testing. If the FDA disagrees with our determinations 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 penalties or fines.

The FDA issued a new Final Guidance titled Enforcement Policy for Ventilators and Accessories and Other Respiratory Devices During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency (PHE) in March 2020. The intent of the guidance is to help address the urgent COVID-19 PHE. It may expand the availability of devices that support patients with respiratory insufficiency due to COVID-19. The guidance allows certain modifications to applicable FDA-cleared respiratory devices without requiring compliance with the pre-market requirements such as submitting a new 510(k). Manufacturers must ensure the device is safe and effective prior to placing the modified device on the market. This guidance and any future guidance or enforcement policy be the FDA may introduce new competitive products that could compete with our products with an easier regulatory pathway which could harm our business, financial condition and results of operations. If Inogen uses this guidance to commercialize devices that do not have the FDA clearance, these products will have to go through FDA 510(k) clearance in the future, and may not be granted such clearance, which would mean we would have to withdraw these products from the market when the FDA terminates or revokes such guidance or enforcement policy, which could harm our business, financial condition and results of operations.

In December 2021, the FDA issued the draft Transition Plan for Medical Devices That Fall Within Enforcement Policies Issued During the Coronavirus Disease 2019 (COVID-19) Public Health Emergency (the "Transition Plan") for public comment which, among other things, proposes a 180-day transition period for manufacturers to submit permanent marketing applications (e.g., 510(k) clearance, de novo classification or PMA) prior to the date that an enforcement discretion policy terminates. After the 180 days, a manufacturer may continue to market its device while the application is pending, provided that the FDA has accepted the application for substantive review prior to the end of the 180-day period. Manufacturers will be expected to comply with all regulatory requirements at the end of the 180-day period, even if their marketing applications are still pending. The final Transition Plan ultimately published by the FDA may deviate, potentially significantly, from the draft Transition Plan and it is therefore impossible to know exactly how the final Transition Plan will impact our business and regulatory compliance requirements.

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 exiting products;

•withdrawals or suspensions of current 510(k) clearances or approvals, resulting in prohibitions on sales of our products; and

•criminal prosecution.

For example, our devices are labeled with a 5-year product life duration and we and our distributors, in some instances, have provided serviced devices after their useful life duration to rental patients in the United States and internationally, or conducted repairs on such devices for the patients who have purchased them. We have taken measures to confirm that continued use of such units was not reported to have created an undue safety risk to patients and is not associated with increased product quality concerns, but there can be no assurance that the risk profile of the devices will not change or that governmental regulatory authorities could not view the practice as a violation of applicable regulations under certain circumstances resulting in adverse regulatory or enforcement action, exposing us to potential fines and other penalties or litigation related to government insurance reimbursement, or warranty or product liability, claims. In such event, our ability to effectively manufacture, market and sell our products could be impaired.

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 and assesses whether devices can be commercially distributed throughout Europe based on the class of the product, and typically, 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. The EU MDR does not apply in Great Britain (England, Scotland and Wales) and the commercialization of medical devices in that territory must comply with rules set out in domestic legislation including the UK Medical Devices Regulations 2002. Devices that are validly CE marked under the EU regime or UK Conformity Assessed (UKCA) marked under the UK Medical Devices Regulations 2002 may be placed on the market or put into service in Great Britain. Devices such as portable oxygen concentrators require third-party assessment by a UK approved body, which is an independent organization designated by the UK Medicines and Healthcare products Regulatory Agency (MHRA) to conduct the conformity assessment. The commercialization of medical devices in the UK are also subject to additional national requirements (e.g. registration and where the manufacturer is not established in the UK, the appointment of a UK Responsible Person).

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

Approximately 26.8%, 22.2% and 20.1% of our total revenue was from sales outside of the United States for the years ended December 31, 2022, 2021, and 2020, respectively. We have sold our products in multiple international countries and overseas regions outside of the United States through our wholly owned subsidiary, distributors and directly to large "house" accounts. In order to market our products in the European Union or other foreign jurisdictions, we are required to 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 European

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 had a three-year implementation period, with full application of the regulation occurring in May 2021 and replacing the pre-existing directives on medical devices in the European Union. Since May 2021, devices must be validly CE marked in accordance with the European Medical Device Regulation (MDR) or, if validly CE marked under the Medical Device Directive (MDD) (or AIMDD), meet the requirements of the MDR's transitional arrangements in order to be placed on the market. Devices that do not satisfy either of these requirements cannot be placed on the market or put into service in the EU or EEA, subject to limited exceptions.

The conformity assessment certificate under the MDD for Inogen's devices expired on May 18, 2022. The conformity assessment certification under the EU Medical Devices Regulation was issued by our notified body for our Inogen One G4 and Rove 6, the updated version of its Inogen One G5 portable oxygen concentrators, on December 12, 2022. We have authorization to affix the CE Mark to our oxygen therapy products and to commercialize our devices in the EU and EEA. Inogen obtained its United Kingdom Conformity Assessed (UKCA) certificate covering the G4, G5 and Inogen at Home oxygen concentrators on April 27, 2022, which allowed Inogen to affix a UKCA mark to these devices and market them in Great Britain.

The foreign regulatory approval process, including with respect to MDR and other jurisdictions, 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 or fail to comply with the applicable regulatory requirements 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.

If the FDA disagrees with us that certain of our data collection and analysis methods do not constitute clinical trials, our business may be harmed.

We gather and analyze certain de-identified retrospective patient data as part of our product development and improvement. We believe that these data collection methods do not constitute clinical trials and, therefore, typically do not pursue or obtain regulatory permission from the FDA or institutional review boards (IRBs) before collecting or analyzing such data. If the FDA disagrees with our interpretation, we may be subject to regulatory enforcement including warning letters, fines, injunctions, consent decrees and civil penalties. In addition, we may be required to collect these types of data under the clinical trial regulatory framework.

Clinical development is a long, expensive, and uncertain process and is subject to delays and the risk that products may ultimately prove unsafe or ineffective in treating the indications for which they are designed. Completion of clinical trials may take several years or more. We may experience numerous unforeseen events in relation to a clinical trial process that could delay or prevent us from receiving regulatory clearance or approval for new products or modifications of existing products, including new indications for existing products, including:

- delays or failure in obtaining approval of our clinical trial protocols from the FDA, other regulatory authorities, or IRBs;
- we, the applicable IRBs, the Data Safety Monitoring Board for such trial, or the FDA or other applicable regulatory authorities may require that we or our investigators suspend or terminate our data collection for various reasons, including, among others (i) failure to conduct the clinical trial in accordance with regulatory requirements, including the FDA's current Good Clinical Practice (GCP), regulations, or our clinical protocols, (ii) by the FDA or other applicable regulatory authority resulting in the imposition of a clinical hold, or (iii) lack of adequate patient informed consent; and
- delays if the FDA concludes that our financial relationships with our data collection partners result in a perceived or actual conflict of interest that may have affected the interpretation or integrity of the data collected. If these relationships and any related compensation to or ownership interest by our data collection partners carrying out the study result in perceived or actual conflicts of interest, or if the FDA concludes that the financial relationship may have affected interpretation of the data, the integrity of the data collected or analyzed may be questioned and the utility of the data itself may be jeopardized, which could result in the delay or rejection by the FDA. Any such delay or rejection could prevent us from commercializing any of our products currently in development.

Any delays in completing our data collection and analysis will increase our costs, slow down our product development and regulatory authorization process and jeopardize our ability to commence sales and generate associated revenue with respect to the applicable product. Any of these occurrences may significantly harm our business, financial condition, results of operations and prospects.

We are subject to 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 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 Unified 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 are required to 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 in 2009, makes certain of HIPAA's privacy and security standards directly applicable to covered entities' business associates. Both covered entities and business associates are subject to significant civil and criminal penalties for failure to comply with the Privacy Standards and Security Standards under HIPAA.

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 modified the breach reporting standard in a manner that made 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. Changes and updates to HIPAA transaction standards 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 financial arrangements 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 of the physician) has a financial relationship, for the furnishing of certain designated health services (DHS) for which payment may be made by Medicare or Medicaid, 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 Federal False Claims Act allows 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 statute) 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 this federal law may include civil monetary penalties, exclusion from federal and state healthcare programs, criminal fines and imprisonment. In addition, the Patient Protection and Affordable Care Act, among other things, amends the intent requirement of the federal anti-kickback and criminal healthcare fraud statutes to clarify that a person or entity does not need to have actual knowledge of the 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 that 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 majority of states also have statutes or regulations similar to the federal anti-kickback, physician self-referral, 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. Penalties under these state laws can be comparable to those under their federal equivalents.

The Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, also created the federal Physician Payments Sunshine Act, which requires applicable manufacturers of drugs, devices, biologicals, and medical supplies covered under Medicare, Medicaid, or the Children's Health Insurance Program to report annually to CMS, information related to payments or other transfers of value made to physicians, as defined, and teaching hospitals, as well as ownership and investment interests in such manufacturer held by physicians and their immediate family members. Additionally, the Substance Use-Disorder Prevention that Promoted Opioid Recovery and Treatment for Patients and Communities Act enacted in 2018, extends the reporting and transparency requirements for physicians under the Physician Payments Sunshine Act to physician assistants, nurse practitioners and other mid-level practitioners, with reporting requirements going into effect in 2022 for payments made in 2021. Failure to submit the required information under the federal Physician Payment Sunshine Act may result in civil monetary penalties of up to an aggregate of $0.19 million per year (and up to an aggregate of $1.265 million per year for "knowing failures"), subject to an annual adjustment for inflation.

In addition, there has been a recent trend of increased federal and state regulation of payments and other transfers of value made to applicable recipients, including physicians. Certain states mandate implementation of compliance programs and/or the tracking and annual reporting of gifts, compensation and other remuneration to physicians and other applicable recipients. 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 HHS 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. This is commonly known as a beneficiary inducement. We sometimes offer customers various discounts and other financial incentives in connection with the sales of our products. While we have processes in place to manage our discount and incentive programs, including the safe harbor regulation for discounts, 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 $0.025 million (subject to annual adjustment for inflation) 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.

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 or 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. HHS makes annual inflation-related increases to the civil monetary penalties in its regulations pursuant to the Federal Civil Penalties Inflation Adjustment Act Improvements Act of 2015. The HHS Annual Civil Monetary Penalties Inflation Adjustment Final Rule issued on May 9, 2022 sets forth adjusted civil monetary penalty amounts that apply to penalties assessed on or after May 9, 2022, if the violation occurred on or after November 2, 2015.

We are also exposed to the risks of fraud, misconduct, or other illegal activity by our employees and third parties who act for us or on our behalf, such as our independent contractors, consultants, commercial partners, and vendors. It is not always possible to identify and deter misconduct by employees and third parties, and the precautions we take to detect and prevent this activity may not be effective in controlling unknown or unmanaged risks or losses or in protecting us from governmental investigations or other actions or lawsuits stemming from a failure to be in compliance with federal and state healthcare fraud and abuse laws. If any such actions are instituted against us, and we are not successful in defending ourselves or asserting our rights, those actions could have a significant impact on our business, including the imposition of significant fines or other sanctions.

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

We have sold our products in a total of 59 international countries or overseas regions 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 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, 2022, we have twenty-four pending U.S. and international patent applications, fifty-one issued U.S. patents, and twenty-one issued foreign patents relating to the design and construction of our oxygen concentrators and our intelligent delivery technology. 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, or challenges to inventorship in court. Foreign patents may be subject to opposition or comparable proceedings in the corresponding foreign patent offices and courts. 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, post grant review, defense, opposition, inventorship, 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. 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 of a patent assigned to Breathe, that inventorship was incorrectly assigned and that Breathe has 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. While we settled our lawsuit with Breathe in January 2021, 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, post grant reviews, 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 and other intellectual property. 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 G3," "G4," "G5," "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. We own pending trademark applications in the United States for the marks "INOGEN ROVE 4" and "INOGEN ROVE 6". We own trademark registrations for the mark "Inogen" in Argentina, Australia, Canada, Chile, China, Columbia, Ecuador, South Korea, Malaysia, Mexico, Europe (European Union Registration), the United Kingdom, Iceland, India, Israel, Japan, Kuwait, New Zealand, Norway, Paraguay, Peru, Turkey, Singapore, South Africa, Switzerland, and Uruguay. We own a trademark registration for the mark "イノジェン" in Japan. We own trademark registrations 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, Europe (European Union Registration), and the United Kingdom. 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) and the United Kingdom. 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 a trademark application for the Inogen design in Bolivia. We own a trademark registration for the Inogen design in China. We own a trademark registration for the mark "إنوجن" in Saudi Arabia. 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 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. While we settled our lawsuit with Breathe, 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, 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 $3.0 million and $5.0 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. 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 and maintain 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. 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 market;
- reimbursement or legislative changes in the oxygen therapy market;
- 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 or due to any other reason;
- 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.

Our certificate of incorporation and our amended and restated bylaws designate the Court of Chancery of the Delaware as the exclusive forum for substantially all disputes between us and our stockholders, and our amended and restated bylaws also provide that the federal district courts will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act of 1933, as amended, each of which could limit our stockholders' ability to choose the judicial forum for disputes with us or our directors, officers, stockholders, or employees.

Our thirteenth amended and restated certificate of incorporation, filed with the Delaware Secretary of State on February 20, 2014, and our amended and restated bylaws, as amended and restated effective as of October 27, 2022, provide that, unless we consent in writing to the selection of an alternative forum (an "Alternative Forum Consent"), the Court of Chancery of the State of Delaware will, to the fullest extent permitted by law, be the sole and exclusive forum for (i) any derivative action or proceeding brought on our behalf, (ii) any action or proceeding 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 or proceeding asserting a claim arising pursuant to any provision of the Delaware General Corporation Law or our certificate of incorporation or bylaws, or (iv) any action asserting a claim governed by the internal affairs doctrine of the State of Delaware. The foregoing shall not apply to any claims under the Securities Exchange Act of 1934, as amended (the "Exchange Act") or the Securities Act of 1933, as amended (the "Securities Act").

Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all Securities Act actions. Accordingly, both state and federal courts have jurisdiction to entertain such claims. To prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our amended and restated bylaws provide that, unless we give an Alternative Forum Consent, the federal district courts of the United States of America will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act against any person in connection with any offering of the Company's securities, including any auditor, underwriter, expert, control person or other defendant. The foregoing shall not apply to any claims under the Exchange Act.

Any person or entity purchasing or otherwise acquiring or holding or owning (or continuing to hold or own) any interest in any of our securities shall be deemed to have notice of and consented to the foregoing provisions of the bylaws and certificate of incorporation. Although we believe these exclusive forum provisions benefit us by providing increased consistency in the application of Delaware law and federal securities laws in the types of lawsuits to which each applies, the exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum of its choosing for disputes with us or any of our current or former directors, officers, stockholders, employees, auditors, underwriters, experts, control persons or others, which may discourage lawsuits with respect to such claims against such defendants. In addition, a stockholder that is unable to bring a claim in the judicial forum of its choosing may be required to incur additional costs in the pursuit of actions which are subject to the exclusive forum provisions described above. Our stockholders will not be deemed to have waived our compliance with the federal securities laws and the rules and regulations thereunder as a result of our exclusive forum provisions. Further, in the event a court finds either exclusive forum provision contained in our bylaws to be unenforceable or inapplicable in an action, we may incur additional costs associated with resolving such action in other jurisdictions, which could harm our results of operations.

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.

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, 2022, 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 48.7% 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, 2022, we lease approximately 51,000 square feet of manufacturing and office space at our corporate headquarters in Goleta, California under a lease that expires in March 2030; approximately 154,000 square feet of manufacturing and office space in Plano, Texas under a lease that expires in April 2031; 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. We believe that our existing facilities 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

Civil investigative demand

On June 21, 2022, the Company received a civil investigative demand (CID) from the United States Attorney's Office for the Northern District of Iowa. The CID states that it was issued in a False Claims Act investigation to determine whether there is or has been a violation of the False Claims Act and that the investigation involves concerns of inappropriate kickbacks provided by certain manufacturers of portable oxygen concentrators and related products in violation of the Anti-Kickback Statute. The CID followed informal requests from the United States Attorney's Office for the Northern District of Iowa begun in late 2020, with which the Company voluntarily complied, to obtain information concerning the Company's participation in (i) zero-interest or below market-rate loans through a third party lender to finance customer purchases; (ii) guaranteeing the obligation of a customer to a finance company in connection with financing of purchases of Company equipment; and (iii) entering into an agreement with a customer that included marketing, exclusivity, discount, and favorable financing terms. The Company is cooperating in the investigation. The Company is currently unable to predict the outcome of this investigation or whether qui tam or other litigation is probable. Regardless of the outcome, this inquiry has the potential to have an adverse impact on the Company due to any related defense and settlement costs, diversion of management resources, and other factors.

Other litigation

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.

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.

Stock performance graph

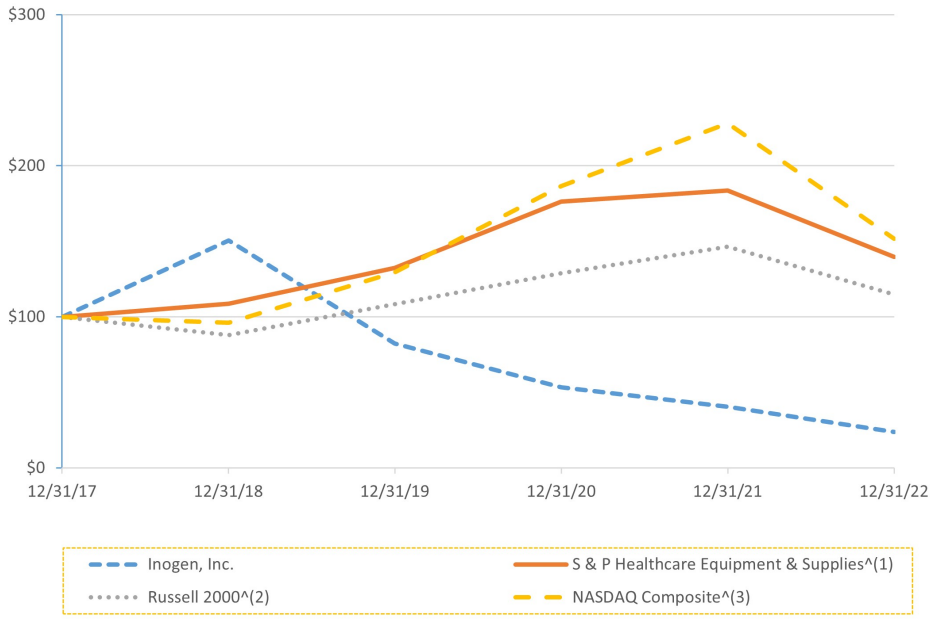
This performance graph shall not be deemed "soliciting material" or to be "filed" with the SEC for purposes of Section 18 of the Exchange Act, or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of ours under the Securities 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, 2017 to December 31, 2022. This graph assumes an investment of $100 on December 31, 2017 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



	12/31/17	12/31/18	12/31/19	12/31/20	12/31/21	12/31/22
Inogen, Inc.	$ 100.00	$ 150.64	$ 82.32	$ 53.34	$ 40.52	$ 23.91
S & P Healthcare Equipment & Supplies^[1]	100.00	108.80	132.36	176.18	183.70	139.58
Russell 2000^[2]	100.00	87.82	108.38	128.95	146.45	114.70
NASDAQ Composite^[3]	100.00	96.12	129.59	186.43	228.03	151.61

(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 17, 2023, there were 12 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. [RESERVED]

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.

The purpose of Management's Discussion and Analysis (MD&A) is to provide an understanding of Inogen's financial condition, results of operations and cash flows by focusing on changes in certain key measures from year-to-year. The MD&A is provided as a supplement to, and should be read in conjunction with, our consolidated financial statements and accompanying notes. The MD&A is organized in the following sections:

- Critical accounting policies and estimates
- Recent accounting pronouncements
- Macroeconomic environment and COVID-19 pandemic
- Overview
- Basis of presentation
- Results of operations
- Liquidity and capital resources
- Sources of funds
- Use of funds
- Non-GAAP financial measures

Critical accounting policies and 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.

For a fixed price, we also offer a lifetime warranty for direct-to-consumer sales for our oxygen concentrators. 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 estimate 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 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. 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 receivables 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 of whether there is a change in condition or 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.

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. As a result of the TAV technology intangible asset disposal, a quantitative analysis was required to be performed as of December 31, 2022 and concluded that there was no impairment. A quantitative analysis was not required to be performed as of December 31, 2021.

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 2 – Summary of significant accounting policies of the audited consolidated notes included in Part IV, Item 16, "Form 10-K Summary" in this Annual Report on Form 10-K for further discussion.

Macroeconomic environment and COVID-19 pandemic

The global economy is experiencing increased inflationary pressures in part due to global supply chain disruptions, labor shortages and other impacts of the COVID-19 pandemic and current macroeconomic environment. The macroeconomic environment has had significant and potentially will continue to have unexpected adverse effects on businesses and healthcare institutions around the world and has and may continue to negatively impact our consolidated operating results. Higher interest rates and capital costs and increased shipping costs are expected to impact demand for our products while the potential for continued supply chain disruptions and inflationary impact on material, labor and logistics could increase our cost of operations.

Despite the COVID-19 pandemic and related PHE adverse impacts to direct-to-consumer sales, we experienced increased rental setups in the second quarter of 2020 through the third quarter of 2022, which we believe was partially due to Medicare and commercial payors reducing some of the administrative burden for oxygen therapy as well as our focus on the prescriber initiative in the rental channel of the business. We believe these factors will continue to contribute to increased rental setups during the remainder of the COVID-19 pandemic and related PHE. We have also seen increased reimbursement rates in some areas for Medicare beneficiaries, which have contributed to the increased rental revenue during the COVID-19 pandemic and related PHE and are expected to continue to do so for the remainder of the COVID-19 pandemic and related PHE.

During 2020 and 2021, we were able to broadly maintain our operations, but in the first quarter of 2022 we were forced to temporarily suspend production for a period of approximately six weeks due to the semiconductor chip shortages discussed below. As seen in this temporary production halt, the COVID-19 pandemic and related PHE have caused and could continue to cause disruption to our supply chain that could impact our operations, limit our growth, and increase our cost of goods sold per unit.

We have seen reduced semiconductor chip availability in 2021 and 2022, which has impacted our ability to produce and sell systems and batteries. While we have seen improvement in the supply of semiconductors, we expect availability issues to continue into 2023. In addition, the uncertainty related to COVID-19 extended lockdowns in China could further impact our operations in 2023 as it relates to manufacturing and finishing of semiconductors. We have attempted to mitigate the impact through forward buying of critical components on the open market, but it has and could continue to negatively impact our ability to manufacture product, and we could be forced to slowdown or temporarily halt production again. We are continuing to focus our mitigation efforts on product redesign, seeking increased commitments on supply and shipment dates from our regular suppliers, sourcing from the open semiconductor channel, and using appropriate pricing actions such as price increases, to help offset some of the increased cost.

We saw inflated costs related to the acquisition of semiconductor chips begin to negatively impact our cost of goods sold in the second half of 2021 and into 2022, and we expect this to continue to impact our cost of goods sold into 2023. We incurred significant costs in the second half of 2021 and 2022 associated with acquiring chips on the open market and a portion of these costs increased our prepaid expense and inventory given that these components were not yet in finished products that were sold during the period. Additionally, we are seeing cost inflation for other components used in our products.

Due to semiconductor chip shortages, we temporarily suspended manufacturing operations at our Texas and California locations as well as Foxconn, our Czech Republic-based OEM, beginning January 3, 2022 until early February 2022 when we resumed production and restarted our manufacturing operations at all three locations. While we have been able to restart manufacturing operations at all locations, we are still seeing challenges in terms of available supply and we believe the supply shortages continue to represent an increased risk to the business into 2023.

Additionally, we have experienced, along with companies across many industries, the macro-economic impact of a challenging employment environment related to hiring and retaining employees and wage inflation. We expect that these hiring, retention, and wage inflation challenges, as well as challenges related to maintaining our current workforce, will continue through 2023. These challenges may negatively affect our ability to grow our business and keep our best employees or could increase our cost of operations. In response, we have implemented more flexible workplace requirements for certain roles, including remote workplace opportunities, but we still expect to be challenged by the macro-economic employment environment.

Overview

We are a medical technology company that primarily develops, manufactures, and markets innovative portable oxygen therapy solutions for patients with chronic respiratory conditions. Our leading portfolio of innovative portable oxygen concentrators (POCs) is optimized to deliver high output ratio-to-weight, meaningful sound suppression and among the longest run times in the industry so that we can meet the needs of patients across a variety of disease states. As of December 31, 2022, we had twenty-four pending patent applications and seventy-two issued patents relating to the design and construction of our respiratory devices. We are positioned in the market as both a medical technology company and as a home medical equipment provider that is accredited in all 50 states in the United States with a significant patient, prescriber and provider reach. Our products have been sold in 59 countries around the world through distributors and medical equipment companies outside of the United States and through direct patient and prescriber sales, as well as resellers and home medical equipment companies in the United States.

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. 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:

•*Optimize our domestic direct-to-consumer sales and prescriber sales teams and increase productivity.* We launched a prescriber sales force initiative in February 2022 to market directly to physicians, gaining the prescription at initiation and maximizing the number of months of billing for long-term oxygen treatment (LTOT). Also, as part of our growth plans, we expect to continue to expand sales capacity by focusing on increased productivity driven by improved sales management discipline, insights-informed tools, and optimized patient lead generation.

•*Expand our domestic direct-to-consumer marketing efficiently and optimize pricing.* We have maintained our marketing efforts to continue to drive patient awareness of our products and patient inquiries about their ability to switch from their

current oxygen products to our technology as the patient becomes dissatisfied with their current modality. We plan to optimize marketing spend to drive consumer and physician awareness of our products in 2023. We raised prices as of September 1, 2021 and March 1, 2022 to partially offset rising product costs.

•*Expand our rental revenues.* We are evolving our operating model to focus the enhanced prescriber sales team on rental opportunities with our direct-to-consumer sales team focusing mainly on sales. We believe the new specialized operating model will drive higher rental setups as we expand prescriber and payor awareness of our products and services.

•*Expand our domestic HME provider and reseller sales.* We are also focused on building our domestic business-to-business partnerships, including relationships with distributors, key accounts, resellers, our private label partner, traditional HME providers. We offer patient-preferred, low total cost of ownership products to help providers convert their businesses to a non-delivery POC business model. Supplemental oxygen is a treatment prescribed by healthcare professionals for some patients with hypoxemia, which in some cases may be caused or exacerbated by COVID-19.

However, in spite of the increased demand associated with the use of supplemental oxygen to treat COVID-19, starting in the third quarter of 2021 through the second quarter of 2022, we have seen supply constraints associated with the semiconductor chip shortage that led to a significant decline in this channel, specifically in the first quarter of 2022 as we were forced to temporarily halt production from early January 2022 to early February 2022 due to these supply constraints. We were able to fulfill a large portion of the demand backlog beginning in the third quarter of 2022 and into the fourth quarter of 2022 and expect a return to normalized demand in the first half of 2023.

•*Increase international business-to-business adoption.* Although our main growth opportunity remains POC adoption in the United States given what we still believe is a relatively low penetration rate, we believe there is a sizable international market opportunity, particularly in Europe where there is existing oxygen reimbursement for respiratory conditions. In order to take advantage of these international markets, we have partnered with distributors who serve those markets and key customers in them. We additionally have an Inogen base of operations for sales and customer service in the Netherlands, and use a contract manufacturer, Foxconn, located in the Czech Republic to support the majority of our European sales volumes. We have sold our products in a total of 59 international countries and overseas regions.

Inogen products were commercialized in the European Union and United Kingdom under Medical Device Directive (MDD) certificates, which expired on May 18, 2022. Due to the expected reduced availability in the second half of 2022 due to the delay in obtaining certification under the MDR, we placed intentional focus on fulfilling European orders in our international business-to-business sales channel until May 18, 2022 when the MDD certificates expired until we obtained the necessary certificate(s) under the MDR. Derogation requests were also filed in a number of EU countries as a precautionary measure in anticipation of a possible delay in the event the supply of the G4 and G5 devices became limited after May 18, 2022. France granted permission in June 2022 for continuous commercialization of G4 and G5 POCs under MDR Articles 94/97 until the end of October 2022, which was extended to March 31, 2023. Permission under Articles 94/97 MDR was also granted by Portugal. Austria and Denmark granted derogations under Article 59 MDR. The conformity assessment certification under the EU Medical Devices Regulation was issued by our notified body for our Inogen One G4 and Rove 6, the updated version of its Inogen One G5 portable oxygen concentrators, on December 12, 2022. We have authorization to affix the CE Mark to our oxygen therapy products and to commercialize our devices in the EU and EEA. Inogen obtained its United Kingdom Conformity Assessed (UKCA) certificate covering the G4, G5 and Inogen at Home oxygen concentrators on April 27, 2022, which allowed Inogen to affix a UKCA mark to these devices and market them in Great Britain.

Over time, as the U.S. and European markets mature, our growth will depend on our ability to drive POC adoption in developing or emerging markets, where limited oxygen therapy treatment and reimbursement exists today. However, growth may also be limited by regulatory and reimbursement clearances, currency fluctuations, capital expenditure constraints, ongoing restructuring challenges, and tender uncertainty.

•*Invest in our oxygen product offerings to develop innovative products and expand clinical evidence.* We incurred $21.9 million, $16.6 million and $14.1 million in 2022, 2021 and 2020, respectively, in research and development costs, and we intend to continue to make such investments in the foreseeable future.

With EU MDR certification in December 2022, we launched Rove 6, our latest portable oxygen concentrator. We have also announced U.S. Food and Drug Administration 510(K) clearance for Rove 4 that will be launched in 2023. We launched the Inogen One G5 in 2019. 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. The Inogen

One G5 represented more than 84% of total domestic POC units sold in the twelve months ended December 31, 2022, showing the strong demand for this product from both patients and providers.

Inogen Connect, our connectivity platform on our Inogen One G4® and Inogen One G5 products in the United States and Canada, 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.

We plan to also invest in clinical studies to evaluate expected improvements in clinical, economic and patient reported outcomes associated with the use of our products as part of our efforts to drive payor and prescriber advocacy for our products.

•*Expand our product offerings.* We are primarily focused on expanding new products that drive benefits to patients, prescribers and our customers with a clinically-relevant pipeline. These products would include innovations that strengthen our offerings in COPD, as well as future innovations that differentiate beyond devices to allow patients and clinicians to better manage respiratory disease with advanced portable oxygen concentrations with digital health value added services, broader use for hypercapnia and shortness-of-breath, and expansion to other related disease indications. We are also committed to pursuing complementary acquisition opportunities to strengthen our technology, product offerings, and channel access.

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 use a contract manufacturer located in the Czech Republic to manufacture high volume products and perform product repairs to improve delivery to our European accounts. In 2022, we focused on securing supply for components to make our products in spite of the higher costs of semiconductor chips, reducing the cost of our Inogen One G5 product (excluding semiconductor chips), and increasing the robustness of our supply chain to reduce potential component constraints as we made efforts to 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 have elected to source certain key components from single sources of supply, including our batteries, motors, valves, columns, and some molded plastic components. In some cases, maintaining a single source of supply can allow us to control production costs and inventory levels and to manage component quality, but also may lead to supply availability risks, and means our ability to maintain production is dependent on these single source suppliers, which may put us at an increased risk of supply disruption, as we have seen from the production halt we implemented in early January 2022 through early February 2022. In order to help 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, a continued reduction or halt in supply from one of these single-source suppliers, any dual-sourced suppliers or any other limited source suppliers with similar sub-component suppliers could limit or prevent our ability to manufacture our products or devices until one or more sufficient replacement suppliers 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 in some cases those components are available in only limited supplies from limited manufacturers or suppliers, and the partial or complete loss of one or more of these manufacturers or suppliers could cause significant production delays or stoppages, 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, 2022, 2021 and 2020, approximately 26.8%, 22.2% and 20.1%, respectively, of our total revenue was from sales to customers outside the United States, primarily in Europe. Approximately 70.9%, 74.1% and 73.6% of the non-U.S. revenue for the years ended December 31, 2022, 2021 and 2020, respectively, were invoiced in Euros with the remainder invoiced in United States dollars. We have sold our products in a total of 59 international countries and overseas regions 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.

Sales revenue

Our future financial performance will be driven in part by the growth in sales of our portable oxygen concentrators, and, to a lesser extent, sales of batteries, other accessories, and our Inogen At Home stationary oxygen concentrators. We plan to grow our system sales in the coming years through multiple strategies including: improving sales force productivity, hiring additional sales representatives directly or through our contract sales organization, investing in consumer and physician awareness and advocacy through increased sales and marketing efforts, expanding our clinical evidence, expanding our sales infrastructure and efforts outside of the United States, expanding our business-to-business sales through key strategic partnerships, and enhancing our product offerings through additional product launches. While we believe HME providers are still in the process of converting their business model to a non-delivery model through the purchase of POCs, growth has been challenged due to the COVID-19 pandemic and related PHE, HME restructuring efforts, lack of access to available credit, provider capital expenditure constraints, and risk of potential changes in reimbursement rates.

Our direct-to-consumer sales processes involve 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 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 secured. 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 6-10% 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 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 or reimbursement rates, business restructuring activities toward a non-delivery model, capital constraints, and overall changes in the net oxygen therapy patient populations, and is presently being impacted by the COVID-19 pandemic and related PHE. As a result of these factors, product purchases can be subject to changes in demand by customers.

We sold approximately 170,500 systems in 2022, 175,800 systems in 2021 and 178,900 systems in 2020. The decline over the past two years was primarily caused by supply chain constraints, the delay in EU MDR approval, and the temporary suspension of manufacturing at all three locations in the first quarter of 2022.

Rental revenue

Our 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 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 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. However, during the COVID-19 PHE, CMS has reduced the paperwork requirements for Medicare oxygen therapy patients, as discussed in more detail in the Reimbursement section below. CMS has also adopted additional changes to the administrative requirements to dispense and bill for oxygen therapy, which is discussed in more detail in the Reimbursement section below, which may reduce the administrative burden and increase patient access to our products.

Rental revenue increased in 2022 compared to 2021, primarily due to a greater number of patients on service and higher Medicare reimbursement rates. Medicare reimbursement rates for oxygen therapy have increased, as detailed in the risk factor entitled "*The competitive bidding process or other reimbursement policy changes under Medicare or other third-party payors could negatively affect our business and financial condition.*". We plan to add new rental patients on service in future periods through multiple

strategies, including expanding our prescriber sales teams, expanding our direct-to-consumer marketing efforts, investing in patient and physician awareness and advocacy, expanding clinical evidence, and securing additional insurance contracts.

A portion of rental patient population includes a capped rental period during which no additional reimbursement is allowed unless additional criteria are met. This capped period begins after month 36 and continues until month 60. The ratio of billable patients to total patients on service is critical to maintaining rental revenue growth as patients on service increase. 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 post-36 month 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 45,600, 42,900 and 32,200 oxygen rental patients as of December 31, 2022, 2021 and 2020, 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 billable patients as a percentage of patients on service, reimbursement levels by payor, patient location, the number of capped patients, write-offs for uncollectable balances, and rental revenue adjustments.

Reimbursement

We rely significantly on reimbursement from Medicare and private payors, including Medicare Advantage plans and Medicaid, 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, 2022, 2021 and 2020, approximately 77.0%, 81.9% and 81.5%, respectively, of our rental revenue was derived from Medicare's traditional fee-for-service reimbursement programs.

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. In particular, due to the COVID-19 pandemic and related PHE, we have seen and expect to continue to see a disruption in our normal seasonal trends due to the mandates and behaviors emanating from the COVID-19 pandemic and related PHE, including shelter-in-place orders, reduced travel, and lower consumer confidence, and we did not see the typical seasonal increases in direct-to-consumer sales in 2020 that we have seen in prior years, although a partial return to normal seasonal trends was seen in 2021 and 2022. Additionally, 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, 2022, 2021, and 2020, the sales revenue in the second quarter accounted for 27.9%, 29.0% and 23.4%, respectively, and the sales revenue in the third quarter accounted for 28.3%, 26.0% and 23.8%, respectively, of our total sales revenue.

In particular, due to the COVID-19 pandemic and related PHE, we have seen a disruption in our normal seasonal trends, as, due to the mandates and behaviors emanating from the COVID-19 pandemic and related PHE, including shelter-in-place orders, reduced travel, and lower consumer confidence, we did not see the typical seasonal increases in direct-to-consumer sales in 2020, 2021 and 2022 that we have seen in prior years. 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.

Basis of presentation

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

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 based on revenue channel mix, as we introduce new products, our product costs change, we have changes in purchase volumes, and as currency variations occur. For example, the higher costs for semiconductor chips has had a negative impact on our gross margin, and we expect that will continue in 2023. Additionally, fluctuations in the channel mix could cause variability in our gross margins, as direct-to-consumer sales and rental revenue have higher margins than the business-to-business channels.

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, and related accessories to individual consumers, our private label partner, HME providers, distributors, resellers, and charitable organizations 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 increased in 2022, primarily due to higher patients on service and higher Medicare reimbursement rates. We expect our rental revenue to increase in future periods as we scale the prescriber sales team, secure additional insurance contracts, and increase new rental setups. In addition, for the duration of the COVID-19 PHE, we expect to benefit from higher Medicare reimbursement rates and reduced administrative requirements for oxygen therapy enacted due to the COVID-19 PHE. We also expect that our rental revenue will be impacted by the number of our sales representatives, reimbursement rate changes, including the impact of COVID-19 PHE changes, the level of and response from potential customers to direct-to-consumer marketing spend, product launches, the number of billable patients and denial rates, 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 expense, 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. Provisions for warranty obligations are included in cost of sales revenue and are provided for at the time of revenue recognition.

Supply chain disruptions began negatively impacting our cost of sales revenue starting in the third quarter of 2021 and are expected to continue to do so through 2023. The supply chain constraints are primarily associated with semiconductor chips used in our batteries and printed circuit boards which are components of our POCs. In addition to the semiconductor chip limitations, we are continuing to see supply chain constraints for other components used in our products. We expect this to have an increased impact on our material costs into 2023 until supply and demand get closer to equilibrium.

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 2021 and 2022, 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 2023.

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 manufacturing cost per unit.

Cost of rental revenue

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

Rental gross margin percentage could fluctuate due to changes in depreciation expense, cost to service and maintain the rental fleet as well as the percentage of patients on service in the capped period.

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, engineering, and medical affairs employees. It also includes facility costs, laboratory supplies, product development materials, consulting fees, clinical studies 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 development and commercialization of new and existing products.

We plan to continue to invest in research and development activities to stay at the forefront of patient preference in oxygen therapy, including significant investments in clinical research. We also 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 broadening our product portfolio.

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 activities, travel and entertainment expenses as well as allocated facilities costs.

We continue to recruit to add new sales representatives, while maintaining our hiring standards. Going forward, our plan is to optimize our sales capacity while focusing on increased productivity, improved sales personnel and lead distribution systems, and improved training. We expect to continue to invest in sales and marketing expense in future periods, including our sales and sales support team which includes our prescriber sales team, increasing our rental infrastructure, and rising patient support costs as our patient and customer base increases.

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, regulatory, legal, human resources, and information technology departments as well as facilities costs, 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. General and administrative expense also includes changes in the fair value of the New Aera earnout liability.

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. General and administrative expense will 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.

Loss on disposal of intangible asset

Our loss on disposal of intangible asset consists of the disposal of intangible assets, fixed assets, construction in process and inventories in accordance with ASC 360-10 —*Long-lived assets.*

Other income (expense), net

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

Income taxes

We account 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 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 year-to-year depending on our stock price in each period.

Results of operations

Comparison of years ended December 31, 2022 and 2021

Revenue

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Sales revenue	$ 320,549	$ 311,730	$ 8,819	2.8 %	85.0 %	87.1 %
Rental revenue	56,692	46,273	10,419	22.5 %	15.0 %	12.9 %
Total revenue	$ 377,241	$ 358,003	$ 19,238	5.4 %	100.0 %	100.0 %

Sales revenue increased $8.8 million for the year ended December 31, 2022 from the year ended December 31, 2021, or an increase of 2.8% from the comparable year. The increase was primarily attributable to an increase in international business-to-business sales, partially offset by lower domestic business-to-business and direct-to-consumer sales. We sold approximately 170,500 oxygen systems during the year ended December 31, 2022 compared to approximately 175,800 oxygen systems sold during the year ended December 31, 2021, a decrease of 3.0%. The decrease in the number of systems sold resulted primarily due to supply chain constraints.

Rental revenue increased $10.4 million for the year ended December 31, 2022 from the year ended December 31, 2021, or an increase of 22.5% from the comparable year. The increase in rental revenue was primarily related to higher rental patients on service, higher percentage of billable patients and higher Medicare reimbursement rates.

(amounts in thousands)	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
Revenue by region and category	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Business-to-business domestic sales	$ 86,049	$ 91,371	$ (5,322)	-5.8 %	22.8 %	25.5 %
Business-to-business international sales	101,163	79,460	21,703	27.3 %	26.8 %	22.2 %
Direct-to-consumer domestic sales	133,337	140,899	(7,562)	-5.4 %	35.4 %	39.4 %
Direct-to-consumer domestic rentals	56,692	46,273	10,419	22.5 %	15.0 %	12.9 %
Total revenue	$ 377,241	$ 358,003	$ 19,238	5.4 %	100.0 %	100.0 %

Domestic business-to-business sales decreased 5.8% for the year ended December 31, 2022 compared to the year ended December 31, 2021 due to the supply chain constraints that limited our ability to meet all customer demand during the first half of 2022, partially offset by improved average selling prices.

International business-to-business sales increased 27.3% for the year ended December 31, 2022 compared to the year ended December 31, 2021, mostly driven by increased average selling prices and improved demand primarily in Europe as we placed intentional focus on fulfilling European orders in our international business-to-business sales channel prior to the EU MDD certificate expiration. In the year ended December 31, 2022, sales in Europe as a percentage of total international sales revenue increased slightly to 86.9% versus 86.8% in the comparative period in 2021.

Domestic direct-to-consumer sales decreased 5.4% for the year ended December 31, 2022 compared to the year ended December 31, 2021, primarily due to lower sales representative headcount and an increased percentage of non-tenured sales representatives, partially offset by increased average selling prices versus the comparative period in the prior year.

Domestic direct-to-consumer rentals increased 22.5% for the year ended December 31, 2022 compared to the year ended December 31, 2021, primarily due to an increase in patients on service and increased Medicare reimbursement rates due to the inflation adjustment effective January 1, 2022.

Cost of revenue and gross profit

(amounts in thousands)	Years ended December 31, 2022	2021	Change 2022 vs. 2021 $	Change 2022 vs. 2021 %	% of Revenue 2022	% of Revenue 2021
Cost of sales revenue	$ 197,805	$ 161,824	$ 35,981	22.2 %	52.5 %	45.2 %
Cost of rental revenue	25,903	19,696	6,207	31.5 %	6.8 %	5.5 %
Total cost of revenue	$ 223,708	$ 181,520	$ 42,188	23.2 %	59.3 %	50.7 %
Gross profit - sales revenue	$ 122,744	$ 149,906	$ (27,162)	-18.1 %	32.5 %	41.9 %
Gross profit - rental revenue	30,789	26,577	4,212	15.8 %	8.2 %	7.4 %
Total gross profit	$ 153,533	$ 176,483	$ (22,950)	-13.0 %	40.7 %	49.3 %
Gross margin percentage - sales revenue	38.3 %	48.1 %				
Gross margin percentage - rental revenue	54.3 %	57.4 %				
Total gross margin percentage	40.7 %	49.3 %				

Cost of sales revenue increased $36.0 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 22.2% from the comparable year. The largest driver of increased cost was premiums paid for components used to manufacture our batteries and motherboards used in our POCs. The year ended December 31, 2022 included $23.8 million of higher material costs associated with open-market purchases of semiconductor chips used in our batteries and POCs. Additionally, we experienced higher material and warranty cost per unit and increased labor and overhead costs per unit caused by lower labor and overhead absorption, partially due to the temporary manufacturing shutdown in early 2022.

Cost of rental revenue increased $6.2 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 31.5% from the comparable year. The increase in cost of rental revenue was primarily attributable to an increase in total patients on service, which led to increased rental asset depreciation expense, loss on rental units, and servicing costs per patient on service. Cost of rental revenue included $11.1 million of rental asset depreciation for the year ended December 31, 2022 compared to $8.9 million for the year ended December 31, 2021.

Gross margin on sales revenue decreased to 38.3% for the year ended December 31, 2022 from 48.1% for the year ended December 31, 2021. The decrease was primarily due to higher material, warranty, labor and overhead costs as discussed above. Additionally, unfavorable channel mix contributed to the margin compression. Total worldwide business-to-business sales revenue accounted for 58.4% of total sales revenue in the year ended December 31, 2022 versus 54.8% in the year ended December 31, 2021. The decrease was partially offset by higher average selling prices.

Rental revenue gross margin percentage decreased to 54.3% for the year ended December 31, 2022 from 57.4% for the year ended December 31, 2021, primarily due to higher depreciation expense, loss on rental units, and higher servicing costs per patient on service, partially offset by higher Medicare reimbursement rates.

Research and development expense

(amounts in thousands)	Years ended December 31, 2022	2021	Change 2022 vs. 2021 $	Change 2022 vs. 2021 %	% of Revenue 2022	% of Revenue 2021
Research and development expense	$ 21,943	$ 16,576	$ 5,367	32.4 %	5.8 %	4.6 %

Research and development expense increased $5.4 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 32.4% over the comparable period, primarily due to a $4.0 million increase in product development expenses and a $1.1 million increase in personnel-related expenses.

Sales and marketing expense

(amounts in thousands)	Years ended December 31, 2022	2021	Change 2022 vs. 2021 $	Change 2022 vs. 2021 %	% of Revenue 2022	% of Revenue 2021
Sales and marketing expense	$ 120,767	$ 112,815	$ 7,952	7.0 %	32.0 %	31.5 %

Sales and marketing expense increased $8.0 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 7.0% from the comparable period, due to an increase of $8.3 million of consulting fees, mainly for the deployment of the prescriber sales team, $3.8 million in professional fees and licenses, partially offset by a decrease in personnel-related expenses of $2.2 million and $1.9 million of media and advertising costs. In the year ended December 31, 2022, we spent $33.3 million in media and advertising costs versus $35.2 million in the comparative period in 2021.

General and administrative expense

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
General and administrative expense	$ 43,905	$ 37,852	$ 6,053	16.0 %	11.6 %	10.6 %

General and administrative expense increased $6.1 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 16.0% from the comparable period. The increase was primarily attributable to a $6.4 million increase in personnel-related expenses, $0.9 million in consulting fees, $0.9 million in legal fees, and $0.8 million in dues, fees and licenses. These increases were partially offset by a $3.8 million increase in the benefit from the change in the fair value of the New Aera earnout liability and a $0.6 million decrease in officer transition costs.

Loss on disposal of intangible asset

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Loss on disposal of intangible asset	$ 52,161	$ —	$ 52,161	100.0 %	13.8 %	0.0 %

Loss on disposal of intangible asset increased $52.2 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 100.0% from the comparable period. On December 19, 2022, we disposed of the technology intangible asset previously acquired from New Aera related to the TAV technology by ceasing development of such asset and abandoning the asset.

Other income (expense)

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Interest income	$ 2,837	$ 129	$ 2,708	2099.2 %	0.7 %	0.0 %
Other expense	(862)	(710)	(152)	21.4 %	-0.2 %	-0.2 %
Total other income (expense), net	$ 1,975	$ (581)	$ 2,556	439.9 %	0.5 %	-0.2 %

Total other income (expense), net increased $2.6 million for the year ended December 31, 2022 from the year ended December 31, 2021, an increase of 439.9% from the comparable period, primarily attributable to an increase of $2.7 million in interest income due to the higher interest rate environment, partially offset by an increase of $0.2 million in net foreign currency losses.

Income tax expense

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Income tax expense	$ 504	$ 14,992	$ (14,488)	-96.6 %	0.1 %	4.2 %
Effective income tax rate	*-0.6%*	*173.1 %*				

Income tax expense decreased $14.5 million for the year ended December 31, 2022 from the year ended December 31, 2021, primarily resulting from the recording of a valuation allowance on the use of deferred tax assets in the prior period. Income taxes for the year ended December 31, 2022, were attributable to foreign taxes and minimum state taxes.

Our effective tax rate for the year ended December 31, 2022 decreased compared to the year ended December 31, 2021, primarily due to the recording of a valuation allowance on the use of deferred tax assets in the prior period.

Net loss

	Years ended December 31,		Change 2022 vs. 2021		% of Revenue	
(amounts in thousands)	**2022**	**2021**	**$**	**%**	**2022**	**2021**
Net loss	$ (83,772)	$ (6,333)	$ (77,439)	-1222.8 %	-22.2 %	-1.8 %

Net loss increased $77.4 million for the year ended December 31, 2022 from the year ended December 31, 2021, or an increase of 1222.8% from the comparable period. The increase in net loss was primarily related to a $52.2 million loss on disposal of intangible asset and a $23.0 million reduction in gross profit and higher operating expense, partially offset by an increase in the benefit from the change in fair value of the New Aera earnout liability.

Comparison of years ended December 31, 2021 and 2020

A discussion of changes in our results of operations during the year ended December 31, 2021 compared to the year ended December 31, 2020 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, 2021, filed with the SEC on February 24, 2022, which discussion is incorporated herein by reference and which is available free of charge on the SECs website at www.sec.gov.

Liquidity and capital resources

As of December 31, 2022, we had cash and cash equivalents of $187.0 million, which consisted of highly liquid investments with a maturity of three months or less. For the years ended December 31, 2022, 2021 and 2020, we received $1.7 million, $15.6 million and $2.4 million, respectively, in proceeds related to stock option exercises and our employee stock purchase plan.

Our principal uses of cash for liquidity and capital resources in the year ended December 31, 2022 consisted of net cash used in operating activities of $37.5 million and capital expenditures of $21.2 million including additional rental equipment and other property, plant and equipment.

We believe that our current cash, cash equivalents 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)	Years ended December 31,		
Summary of consolidated cash flows	**2022**	**2021**	**2020**
Cash provided by (used in) operating activities	$ (37,532)	$ 23,633	$ 37,013
Cash used in investing activities	(10,877)	(14,645)	(25,640)
Cash provided by financing activities	380	15,000	2,066
Effect of exchange rates on cash	(481)	(426)	486
Net increase (decrease) in cash and cash equivalents	$ (48,510)	$ 23,562	$ 13,925

(amounts in thousands)	December 31,	
Summary of working capital	**2022**	**2021**
Total current assets	$ 304,645	$ 329,186
Total current liabilities	65,349	61,512
Net working capital	$ 239,296	$ 267,674

Operating activities

Historically, 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 used in operating activities for the year ended December 31, 2022 consisted primarily of our net loss of $83.8 million and the non-cash add back for change in fair value of the earnout liability of $15.4 million, partially offset by non-cash adjustment items such as loss on disposal of intangible asset of $52.2 million, depreciation of equipment and leasehold improvements and amortization of intangibles of $23.5 million, provision for sales returns and doubtful accounts of $13.0 million, stock-based compensation expense of $12.3 million, net loss on disposal of rental equipment and other fixed assets of $3.1 million, and provision for inventory obsolescence and other inventory losses of $2.4 million. The net changes in operating assets and liabilities resulted in a net use of cash of $44.7 million.

Net cash provided by operating activities for the year ended December 31, 2021 consisted primarily of our non-cash expense items such as depreciation of equipment and leasehold improvements and amortization of our intangibles of $21.6 million, a decrease in deferred tax assets of $14.4 million, provision for sales returns and doubtful accounts of $11.1 million, stock-based compensation expense of $10.9 million, provision for inventory obsolescence and other inventory losses of $2.1 million, and net loss on disposal of rental equipment and other fixed assets of $1.5 million; partially offset by the change in fair value of earnout liability of $11.6 million and our net loss of $6.3 million. The net changes in operating assets and liabilities resulted in a net use of cash of $20.1 million.

Net cash provided by operating activities for the year ended December 31, 2020 consisted primarily of our non-cash expense items such as depreciation of equipment and leasehold improvements and amortization of our intangibles of $18.6 million, provision for sales returns and doubtful accounts of $10.5 million, stock-based compensation expense of $8.2 million, provision for rental revenue adjustments of $2.6 million, provision for inventory obsolescence and other inventory losses of $1.3 million, change in fair value of earnout liability of $1.1 million, net loss on disposal of rental equipment and other fixed assets of $0.9 million and our net loss of $5.8 million. The net changes in operating assets and liabilities resulted in no effect on cash flows from operating activities.

Investing activities

Net cash used in investing activities generally includes the production and purchase of rental assets, property, plant and equipment, and intangibles to support our expanding business as well as maturities or purchases of marketable securities.

For the year ended December 31, 2022, we invested $21.2 million in the production and purchase of rental assets and other property and equipment, partially offset by $10.0 million we received in maturities of marketable securities.

For the year ended December 31, 2021, we invested $23.9 million in the production and purchase of rental assets and other property, equipment, and intangible assets as well as $10.0 million in corporate bonds with maturities greater than three months that were classified as marketable securities, partially offset by $19.3 million in maturities of marketable securities.

For the year ended December 31, 2020, we invested $22.8 million in corporate bonds, U.S. Treasury securities and agency mortgage-backed securities with maturities greater than three months that were classified as marketable securities, partially offset by $14.5 million in maturities of available-for-sale investments. In addition, we invested $17.6 million in the production and purchase of rental assets and other property, equipment, and intangible assets.

We expect to continue investing in property, equipment and leasehold improvements as we expand our operations. Our business is inherently capital intensive. 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 and maintenance 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 and the issuance of preferred and common stock.

For the year ended December 31, 2022, net cash provided by financing activities consisted of $1.7 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 $1.4 million.

For the year ended December 31, 2021, net cash provided by financing activities consisted of $15.6 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 $0.6 million.

For the year ended December 31, 2020, net cash provided by financing activities consisted of $2.4 million from purchases under our employee stock purchase program and the proceeds received from stock options that were exercised, partially offset by the payment of employment taxes related to the vesting of restricted stock awards and restricted stock units of $0.4 million.

Sources of funds

Our net cash used in operating activities in the year ended December 31, 2022 was $37.5 million compared to net cash provided by operating activities of $23.6 million in the year ended December 31, 2021. As of December 31, 2022, we had cash and cash equivalents of $187.0 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 cash flows from customer collections have remained consistent and our annual cash provided by operating activities has generally 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 and Adjusted EBITDA are financial measures that are not calculated in accordance with U.S. GAAP. We define EBITDA as net income (loss) excluding interest income, interest expense, taxes and depreciation and amortization. Adjusted EBITDA also excludes stock-based compensation, change in fair value of earnout liability, and loss on disposal of intangible asset. Below, we have provided a reconciliation of EBITDA and Adjusted EBITDA to our net loss, the most directly comparable financial measure calculated and presented in accordance with U.S. GAAP. EBITDA and Adjusted EBITDA should not be considered alternatives to net loss, or any other measure of financial performance calculated and presented in accordance with U.S. GAAP. Our EBITDA and Adjusted EBITDA may not be comparable to similarly titled measures of other organizations because other organizations may not calculate EBITDA and Adjusted EBITDA in the same manner as we calculate these measures.

We include EBITDA and Adjusted EBITDA in this Annual Report on Form 10-K because they are important measures upon which our management assesses our operating performance. We use EBITDA and Adjusted EBITDA 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, the impact of the change in fair value of the earnout liability and the impact of the loss on disposal of intangible asset. Because EBITDA and Adjusted EBITDA facilitate internal comparisons of our historical operating performance on a more consistent basis, we also use EBITDA and Adjusted EBITDA for business planning purposes, to incentivize and compensate our management personnel, and in evaluating acquisition opportunities. In addition, we believe EBITDA and Adjusted EBITDA 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 and Adjusted EBITDA 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; and
- other companies, including companies in our industry, may calculate EBITDA and Adjusted EBITDA measures differently, which reduces their usefulness as a comparative measure.

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

The following table presents a reconciliation of EBITDA and Adjusted EBITDA to our net loss, the most comparable U.S. GAAP measure, for each of the periods indicated:

(amounts in thousands)	**Years ended December 31,**		
Non-GAAP EBITDA and Adjusted EBITDA	**2022**	**2021**	**2020**
Net loss	$ (83,772)	$ (6,333)	$ (5,829)
Non-GAAP adjustments:			
Interest income	(2,837)	(129)	(909)
Provision for income taxes	504	14,992	549
Depreciation and amortization	23,514	21,628	18,581
EBITDA (non-GAAP)	(62,591)	30,158	12,392
Stock-based compensation	12,283	10,943	8,203
Change in fair value of earnout liability	(15,386)	(11,596)	1,053
Loss on disposal of intangible asset	52,161	—	—
Adjusted EBITDA (non-GAAP)	$ (13,533)	$ 29,505	$ 21,648

Contractual obligations

The following table reflects a summary of our contractual obligations as of December 31, 2022.

(amounts in thousands)		Payments due by period			
Contractual Obligations	**Total**	**Less than 1 year**	**1-3 years**	**3-5 years**	**More than 5 years**
Operating leases - properties and other [1]	$ 25,183	$ 3,974	$ 9,109	$ 8,356	$ 3,744
Purchase obligations [2]	109,900	109,900	—	—	—
Total	$ 135,083	$ 113,874	$ 9,109	$ 8,356	$ 3,744

(1)We lease manufacturing and office space in Plano, TX, Goleta, CA, Smyrna, TN, Huntsville, AL, Aurora, CO, Cleveland, OH and Breukelen, Netherlands with terms that expire between 2023 and 2031 and miscellaneous office and processing equipment in Texas, California and Ohio with terms expiring between 2023 and 2031.

(2)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.

For additional description of contractual obligations and commitments, see the section titled “Commitments and Contingencies” in the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K.

Contingent consideration

In connection with our acquisition of New Aera, we have contingent obligations to pay up to $31.4 million in earnout payments in cash if certain future financial results are met. As a result of the earnout requirements not expected to be met as of December 31, 2022, we do not expect to make the earnout payments. See the section titled “Fair Value of Earnout Liability” in the Notes to Consolidated Financial Statements included in this Annual Report on Form 10-K for further discussion.

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. 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, 2022 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, cash, receivables and payables. 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, 2022, 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 $7.2 million decline in revenue for the year ended December 31, 2022. 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 (loss) and subsequently reclassified into revenue to offset the hedged exposures as they occur.

Interest rate fluctuation risk

We had cash and cash equivalents of $187.0 million as of December 31, 2022, which consisted of highly liquid investments with a maturity of three months or less. 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, 2022 and December 31, 2021. 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, 2022 or December 31, 2021.

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, 2022. Based upon the evaluation described above, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2022, our disclosure controls and procedures were effective at the reasonable assurance level.

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.

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, 2022 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, 2022 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, 2022, 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, 2022, 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, 2022, of the Company and our report dated February 24, 2023, 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 24, 2023

ITEM 9B. OTHER INFORMATION

Annual Meeting

Our annual meeting of stockholders will be held at 10:00 a.m. Pacific Time on Wednesday, May 31, 2023, as a virtual meeting. Holders of record at the close of business on Monday, April 3, 2023, will be entitled to vote at the meeting.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

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, 2022 (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 ACCOUNTANT 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

None.

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

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, 2022 and 2021, the related consolidated statements of comprehensive loss, stockholders' equity, and cash flows for each of the three years in the period ended December 31, 2022, 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, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2022, 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, 2022, 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 24, 2023, 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.

Critical Audit Matter

The critical audit matter communicated below is a matter arising from the current-period audit of the financial statements that was communicated or required to be communicated to the audit committee and that (1) relates 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 matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

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 estimate 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 $16.5 million at December 31, 2022.

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 the Company's profit margins.
- 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.

/s/ DELOITTE & TOUCHE LLP

Los Angeles, California
February 24, 2023

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

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

	December 31, 2022	December 31, 2021
Assets		
Current assets		
Cash and cash equivalents	$ 187,014	$ 235,524
Marketable securities	—	9,989
Accounts receivable, net	62,725	24,452
Inventories, net	34,093	31,873
Income tax receivable	1,626	1,343
Prepaid expenses and other current assets	19,187	26,005
Total current assets	304,645	329,186
Property and equipment		
Rental equipment, net	61,679	59,073
Manufacturing equipment and tooling	11,497	12,050
Computer equipment and software	9,559	8,585
Furniture and equipment	3,197	3,167
Leasehold improvements	6,126	5,956
Land and building	125	125
Construction in process	2,930	1,639
Total property and equipment	95,113	90,595
Less accumulated depreciation	(51,844)	(51,669)
Property and equipment, net	43,269	38,926
Goodwill	32,852	32,979
Intangible assets, net	177	60,147
Operating lease right-of-use asset	21,653	24,912
Other assets	2,445	3,363
Total assets	$ 405,041	$ 489,513

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, 2022	December 31, 2021
Liabilities and stockholders' equity		
Current liabilities		
Accounts payable and accrued expenses	$ 33,974	$ 25,689
Accrued payroll	11,190	17,307
Warranty reserve - current	7,790	6,480
Operating lease liability - current	3,515	3,393
Deferred revenue - current	8,880	8,568
Income tax payable	—	75
Total current liabilities	65,349	61,512
Long-term liabilities		
Warranty reserve - noncurrent	12,123	7,246
Operating lease liability - noncurrent	19,764	23,281
Earnout liability - noncurrent	—	15,386
Deferred revenue - noncurrent	10,399	11,861
Total liabilities	107,635	119,286
Commitments and contingencies (Note 8)		
Stockholders' equity		
Common stock, $0.001 par value per share; 200,000,000 shares authorized; 22,941,643 and 22,731,586 shares issued and outstanding as of December 31, 2022 and 2021, respectively	23	23
Additional paid-in capital	312,126	299,463
Retained earnings (deficit)	(14,500)	69,272
Accumulated other comprehensive income (loss)	(243)	1,469
Total stockholders' equity	297,406	370,227
Total liabilities and stockholders' equity	$ 405,041	$ 489,513

See accompanying notes to the consolidated financial statements.

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

	Years Ended December 31,		
	2022	**2021**	**2020**
Revenue			
Sales revenue	$ 320,549	$ 311,730	$ 280,189
Rental revenue	56,692	46,273	28,298
Total revenue	377,241	358,003	308,487
Cost of revenue			
Cost of sales revenue	197,805	161,824	156,764
Cost of rental revenue, including depreciation of $11,103, $8,860 and $5,695, respectively	25,903	19,696	13,543
Total cost of revenue	223,708	181,520	170,307
Gross profit			
Gross profit-sales revenue	122,744	149,906	123,425
Gross profit-rental revenue	30,789	26,577	14,755
Total gross profit	153,533	176,483	138,180
Operating expense			
Research and development	21,943	16,576	14,080
Sales and marketing	120,767	112,815	97,520
General and administrative	43,905	37,852	38,605
Loss on disposal of intangible asset	52,161	—	—
Total operating expense	238,776	167,243	150,205
Income (loss) from operations	(85,243)	9,240	(12,025)
Other income (expense)			
Interest income	2,837	129	909
Other income (expense)	(862)	(710)	5,836
Total other income (expense), net	1,975	(581)	6,745
Income (loss) before provision for income taxes	(83,268)	8,659	(5,280)
Provision for income taxes	504	14,992	549
Net loss	(83,772)	(6,333)	(5,829)
Other comprehensive income (loss), net of tax			
Change in foreign currency translation adjustment	(597)	(800)	857
Change in net unrealized gains (losses) on foreign currency hedging	(3,130)	1,746	(82)
Less: reclassification adjustment for net (gains) losses included in net income	1,990	47	(207)
Total net change in unrealized gains (losses) on foreign currency hedging	(1,140)	1,793	(289)
Change in net unrealized gains (losses) on marketable securities	25	1	(6)
Total other comprehensive income (loss), net of tax	(1,712)	994	562
Comprehensive loss	$ (85,484)	$ (5,339)	$ (5,267)
Basic net loss per share attributable to common stockholders (Note 2)	$ (3.67)	$ (0.28)	$ (0.27)
Diluted net loss per share attributable to common stockholders (Note 2)	$ (3.67)	$ (0.28)	$ (0.27)
Weighted-average number of shares used in calculating net loss per share attributable to common stockholders:			
Basic common shares	22,852,571	22,490,027	21,980,326
Diluted common shares	22,852,571	22,490,027	21,980,326

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 (deficit)	Accumulated other comprehensive income (loss)	Total stockholders' equity
	Shares	Amount				
Balance, December 31, 2019	22,031,410	$ 22	$ 263,252	$ 81,434	$ (87)	$ 344,621
Stock-based compensation	—	—	8,203	—	—	8,203
Employee stock purchases	68,467	—	2,084	—	—	2,084
Restricted stock awards issued, net of forfeitures	(27,729)	—	—	—	—	—
Vesting of restricted stock units	49,117	—	(19)	—	—	(19)
Shares withheld related to net restricted stock settlement	(8,444)	—	(331)	—	—	(331)
Stock options exercised	18,626	—	332	—	—	332
Net loss	—	—	—	(5,829)	—	(5,829)
Other comprehensive income	—	—	—	—	562	562
Balance, December 31, 2020	22,131,447	$ 22	$ 273,521	$ 75,605	$ 475	$ 349,623
Stock-based compensation	—	—	10,943	—	—	10,943
Employee stock purchases	60,299	—	1,948	—	—	1,948
Restricted stock awards issued, net of forfeitures	(43,658)	—	—	—	—	—
Vesting of restricted stock units	101,811	—	(412)	—	—	(412)
Shares withheld related to net restricted stock settlement	(4,351)	—	(235)	—	—	(235)
Stock options exercised	486,038	1	13,698	—	—	13,699
Net loss	—	—	—	(6,333)	—	(6,333)
Other comprehensive income	—	—	—	—	994	994
Balance, December 31, 2021	22,731,586	$ 23	$ 299,463	$ 69,272	$ 1,469	$ 370,227
Stock-based compensation	—	—	12,283	—	—	12,283
Employee stock purchases	62,328	—	1,691	—	—	1,691
Restricted stock awards issued, net of forfeitures	(5,134)	—	—	—	—	—
Vesting of restricted stock units	141,728	—	(1,252)	—	—	(1,252)
Shares withheld related to net restricted stock settlement	(3,019)	—	(103)	—	—	(103)
Stock options exercised	14,154	—	44	—	—	44
Net loss	—	—	—	(83,772)	—	(83,772)
Other comprehensive loss	—	—	—	—	(1,712)	(1,712)
Balance, December 31, 2022	22,941,643	$ 23	$ 312,126	$ (14,500)	$ (243)	$ 297,406

See accompanying notes to the consolidated financial statements.

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

	Years Ended December 31,		
	2022	**2021**	**2020**
Cash flows from operating activities			
Net loss	$ (83,772)	$ (6,333)	$ (5,829)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	23,514	21,628	18,581
Loss on rental assets and other fixed assets	3,095	1,521	864
Gain on sale of former rental assets	(154)	(65)	(94)
Provision for sales revenue returns and doubtful accounts	13,024	11,094	10,486
Provision for rental revenue adjustments	—	—	2,579
Provision for inventory losses	2,423	2,062	1,283
Stock-based compensation expense	12,283	10,943	8,203
Deferred income taxes	—	14,444	(82)
Change in fair value of earnout liability	(15,386)	(11,596)	1,053
Loss on disposal of intangible asset	52,161	—	—
Changes in operating assets and liabilities:			
Accounts receivable	(51,337)	(6,127)	(8,177)
Inventories	(5,601)	(10,775)	7,591
Income tax receivable	(281)	705	928
Prepaid expenses and other current assets	6,803	(8,104)	31
Operating lease right-of-use asset	3,259	(16,087)	(2,970)
Other noncurrent assets	224	96	2,296
Accounts payable and accrued expenses	6,759	(6,476)	(5,830)
Accrued payroll	(6,106)	10,231	870
Warranty reserve	6,187	(668)	1,823
Deferred revenue	(1,150)	1,613	(203)
Income tax payable	(82)	(1,141)	319
Operating lease liability	(3,395)	16,668	3,291
Net cash provided by (used in) operating activities	(37,532)	23,633	37,013
Cash flows from investing activities			
Purchases of marketable securities	—	(9,987)	(22,751)
Maturities of marketable securities	10,014	19,256	14,545
Investment in intangible assets	—	(132)	(255)
Investment in property and equipment	(3,337)	(5,482)	(4,385)
Production and purchase of rental equipment	(17,885)	(18,453)	(12,957)
Proceeds from sale of former assets	331	153	163
Net cash used in investing activities	(10,877)	(14,645)	(25,640)

See accompanying notes to the consolidated financial statements.

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

	Years Ended December 31,		
	2022	**2021**	**2020**
Cash flows from financing activities			
Proceeds from stock options exercised	44	13,699	332
Proceeds from employee stock purchases	1,691	1,948	2,084
Payment of employment taxes related to release of restricted stock	(1,355)	(647)	(350)
Net cash provided by financing activities	380	15,000	2,066
Effect of exchange rates on cash	(481)	(426)	486
Net increase (decrease) in cash and cash equivalents	(48,510)	23,562	13,925
Cash and cash equivalents, beginning of period	235,524	211,962	198,037
Cash and cash equivalents, end of period	$ 187,014	$ 235,524	$ 211,962
Supplemental disclosures of cash flow information			
Cash paid (received) during the period for income taxes, net of refunds received	$ 499	$ 1,544	$ (713)
Supplemental disclosure of non-cash transactions			
Property and equipment in accounts payable and accrued liabilities	428	353	55

See accompanying notes to the consolidated financial statements.

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 (POCs) 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.

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, warranty reserves and expense, determining the stand-alone selling price (SSP) and service period of performance obligations, rental asset valuations and write-downs, accounts receivable allowances for bad debts, returns and adjustments, impairment of long-lived assets, stock-based compensation expense, income taxes, 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, and related accessories. Other revenue, which is included in sales revenue on the statements of comprehensive loss, 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.

For a fixed price, the Company also offers a lifetime warranty for direct-to-consumer sales for its oxygen concentrators. 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 loss 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 decrease in deferred revenue related to lifetime warranties for the years ended December 31, 2022 and December 31, 2021 was primarily driven by $6,598 and $5,866, respectively, of revenues recognized that were included in the deferred revenue balances, partially offset by $5,156 and $6,764 of payments received in advance of satisfying performance obligations as of December 31, 2022 and December 31, 2021, respectively. Deferred revenue related to lifetime warranties was $16,534 and $17,976 as of December 31, 2022 and December 31, 2021, respectively, and is classified within deferred revenue – current and noncurrent deferred revenue in the consolidated balance sheets.

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)	Years ended December 31,		
Revenue by region and category	**2022**	**2021**	**2020**
Business-to-business domestic sales	$ 86,049	$ 91,371	$ 96,423
Business-to-business international sales	101,163	79,460	62,147
Direct-to-consumer domestic sales	133,337	140,899	121,619
Total sales revenue	$ 320,549	$ 311,730	$ 280,189

Rental revenue

The Company recognizes equipment rental revenue over the non-cancelable lease term, which is one month, less estimated adjustments, in accordance with Accounting Standards Codification (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, 2022 and December 31, 2021.

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 is 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 of whether 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.

Product Warranty

The Company generally provides a warranty against defects in material and workmanship. The Company provides 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 Company only 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. The Company's products are subject to regulatory and quality standards. The Company establishes an accrued liability for the estimated warranty costs at the time of revenue recognition, with a corresponding provision to cost of goods sold. The Company evaluates the liability quarterly. Warranty costs are primarily estimated based on product return rates, historical warranty repair costs incurred and historical failure rates. The Company may make further adjustments to the warranty reserve when deemed appropriate, giving additional consideration to length of time the product version has been sold and future expectations of performance based on new features and capabilities. Actual warranty costs could differ materially from the estimated amounts.

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	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, 2022			
(amounts in thousands)	**Adjusted cost**	**Gross unrealized gains**	**Fair value**	**Cash and cash equivalents**
Cash	$ 27,970	$ —	$ 27,970	$ 27,970
Level 1:				
Money market accounts	113,534	—	113,534	113,534
Level 2:				
Corporate bonds	6,474	—	6,474	6,474
U.S. Treasury securities	18,913	26	18,939	18,939
Institutional Insured Liquidity Deposit Savings	20,097	—	20,097	20,097
Total	$ 186,988	$ 26	$ 187,014	$ 187,014

	As of December 31, 2021				
(amounts in thousands)	**Adjusted cost**	**Gross unrealized gains**	**Fair value**	**Cash and cash equivalents**	**Marketable securities**
Cash	$ 48,817	$ —	$ 48,817	$ 48,817	$ —
Level 1:					
Money market accounts	186,707	—	186,707	186,707	—
Level 2:					
Corporate bonds	9,988	1	9,989	—	9,989
Total	$ 245,512	$ 1	$ 245,513	$ 235,524	$ 9,989

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 and balance sheet hedges are recorded as a component of accumulated other comprehensive income within stockholders' equity and are recognized in the consolidated statements of comprehensive loss 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 income (expense), net in the consolidated statements of comprehensive loss. 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 $422 and a related receivable of $1,671 as of December 31, 2022 and 2021, respectively.

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 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 loss 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, 2022			
(amounts in thousands)	**Foreign currency translation adjustments**	**Unrealized gains on debt securities**	**Unrealized gains (losses) on cash flow hedges**	**Accumulated other comprehensive income (loss)**
Balance as of December 31, 2021	$ 328	$ 1	$ 1,140	$ 1,469
Other comprehensive income (loss)	(597)	25	(1,140)	(1,712)
Balance as of December 31, 2022	$ (269)	$ 26	$ —	$ (243)

	As of December 31, 2021			
(amounts in thousands)	**Foreign currency translation adjustments**	**Unrealized gains on marketable securities**	**Unrealized gains (losses) on cash flow hedges**	**Accumulated other comprehensive income**
Balance as of December 31, 2020	$ 1,128	$ —	$ (653)	$ 475
Other comprehensive income (loss)	(800)	1	1,793	994
Balance as of December 31, 2021	$ 328	$ 1	$ 1,140	$ 1,469

Comprehensive income (loss) is the total net earnings and all other non-owner changes in equity. Except for net income (loss) 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 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.

As a result of the earnout requirements not expected to be met, the Company considered the fair value measurement of the earnout liability to be $0 as of December 31, 2022. Additional information on the loss on disposal of intangible asset contained later in this Note in *Long-lived assets*. The following table provides quantitative information about Level 3 inputs for fair value measurement of the earnout liability as of December 31, 2021.

Simulation input	As of December 31, 2021
Revenue volatility	15.00 %
WACC	10.50 %
20-year risk free rate	2.02 %
Market price of risk	2.68 %

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

(amounts in thousands)	
Balance as of December 31, 2020	$ 27,612
Change in fair value	(11,596)
Balance as of December 31, 2021	$ 16,016
Change in fair value	(16,016)
Balance as of December 31, 2022	$ —

The Company recorded $0 and $630 of preacquisition loss recoveries that can be withheld from any earnout amounts payable as of December 31, 2022 and December 31, 2021, respectively.

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.

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. Expected credit losses 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:

(amounts in thousands)	December 31, 2022	December 31, 2021
Cash and cash equivalents		
Cash	$ 27,970	$ 48,817
Money market accounts	113,534	186,707
Corporate bonds	6,474	—
U. S. Treasury securities	18,939	—
Institutional Insured Liquidity Deposit Savings	20,097	—
Total cash and cash equivalents	$ 187,014	$ 235,524
Marketable securities		
Corporate bonds	$ —	$ 9,989
Total marketable securities	$ —	$ 9,989

Accounts receivable

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 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 estimate 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 and when recording allowance for sales returns, the sales returns account (contra sales revenue account) is charged.

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 accounts receivable. For the years ended December 31, 2022 and December 31, 2021, the Company had increases of $1,483 and $877, respectively, in the net rental revenue related to prior years.

Net accounts receivable (gross accounts receivable, net of allowances) balance concentrations by major category as of December 31, 2022 and December 31, 2021 were as follows:

(amounts in thousands)	As of December 31, 2022		As of December 31, 2021	
Net accounts receivable	**$**	**%**	**$**	**%**
Rental [1]	$ 5,246	8.4 %	$ 6,011	24.6 %
Business-to-business and other receivables [2]	57,479	91.6 %	18,441	75.4 %
Total net accounts receivable	$ 62,725	100.0 %	$ 24,452	100.0 %

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

(2)Business-to business receivables included extended terms for two customers: 1) one customer with accounts receivable balances of $9,861 and $5,945 as of December 31, 2022 and December 31, 2021, respectively. The 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 $12,000 and $10,000 in coverage as of December 31, 2022 and December 31, 2021, respectively, for this customer with a $400 deductible and 10% retention, and 2) one customer with accounts receivable balance of $22,641 as of December 31, 2022. The customer received extended payment terms of eight equal monthly payments on the December 31, 2022 balance.

The following table sets forth the percentage breakdown of the Company's net accounts receivable by aging category and invoice due date as of December 31, 2022 and December 31, 2021.

(amounts in thousands)	As of December 31, 2022		As of December 31, 2021	
Net accounts receivable by aging category	**$**	**%**	**$**	**%**
Held and Unbilled	$ 303	0.5 %	$ 848	3.5 %
Aged 0-90 days	61,556	98.1 %	22,194	90.8 %
Aged 91-180 days	565	0.9 %	888	3.6 %
Aged 181-365 days	287	0.5 %	450	1.8 %
Aged over 365 days	14	0.0 %	72	0.3 %
Total net accounts receivable	$ 62,725	100.0 %	$ 24,452	100.0 %

The following table sets forth the accounts receivable allowances as of December 31, 2022 and December 31, 2021:

(amounts in thousands)	As of December 31, 2022		As of December 31, 2021	
Allowances - accounts receivable	**$**	**%**	**$**	**%**
Doubtful accounts	$ 77	0.1 %	$ 52	0.2 %
Sales returns	483	0.8 %	810	3.1 %
Total allowances - accounts receivable	$ 560	0.9 %	$ 862	3.3 %

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. 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 primarily on a prepayment basis. Medicare's service reimbursement programs represented more than 10% of the Company’s total revenue for the years ended December 31, 2022 and 2021. One single customer represented more than 10% of the Company’s total revenue for the year ended December 31, 2020. Two customers each represented more than 10% of the Company's net accounts receivable balance with accounts receivable balances of $22,641 and $9,861, respectively, as of December 31, 2022. One single customer and Medicare each represented more than 10% of the Company’s net accounts receivable balance with accounts receivable balances of $5,945 and $2,685, respectively, as of December 31, 2021.

The Company also rents products directly to consumers for insurance reimbursement, which resulted in a customer concentration relating to Medicare’s service reimbursement programs. Medicare’s service reimbursement programs accounted for 77.0%, 81.9% and 81.5% of rental revenue in 2022, 2021 and 2020, respectively, and based on total revenue were 11.6%, 10.6% and 7.5% for 2022, 2021 and 2020, respectively. Accounts receivable balances relating to Medicare’s service reimbursement programs (including held and unbilled, net of allowances) amounted to $2,138 or 3.4% of total net accounts receivable as of December 31, 2022 as compared to $2,685 or 11.0% of total net accounts receivable as of December 31, 2021.

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, 2022, the Company’s three major vendors accounted for 28.1%, 17.7% and 8.0%, respectively, of total raw material purchases. For the year ended December 31, 2021, the Company’s three major vendors accounted for 16.3%, 12.1% and 9.9%, respectively, of total raw material purchases.

A portion of revenue is earned from sales outside the United States. Approximately 70.9%, 74.1% and 73.6% of the non-U.S. revenue for the years ended December 31, 2022, 2021 and 2020, 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, 2022, 2021 and 2020, respectively, is as follows:

(amounts in thousands)	Years ended December 31, 2022	2021	2020
U.S. revenue	$ 276,078	$ 278,543	$ 246,340
Non-U.S. revenue	101,163	79,460	62,147
Total revenue	$ 377,241	$ 358,003	$ 308,487

Inventories

Inventories are stated at the lower of cost and net realizable value, 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 $1,249 and $1,943 as of

December 31, 2022 and 2021, 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. The Company had prepayments for raw materials of $7,017 and $15,426 as of December 31, 2022 and 2021, respectively, that were classified in prepaid expenses and other current assets. During the years ended December 31, 2022, 2021 and 2020, $1,221, $906 and $1,970, 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:

	December 31,	
(amounts in thousands)	**2022**	**2021**
Raw materials and work-in-progress	$ 26,496	$ 21,909
Finished goods	9,324	12,116
Less: reserves	(1,727)	(2,152)
Inventories, net	$ 34,093	$ 31,873

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 loss. Repair and maintenance expense, which includes labor, parts and freight, for rental equipment was $4,528, $3,387 and $2,527 for the years ended December 31, 2022, 2021 and 2020, 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, 2022, 2021 and 2020, respectively.

	Years ended December 31,		
(amounts in thousands)	**2022**	**2021**	**2020**
Rental equipment	$ 11,103	$ 8,860	$ 5,695
Other property and equipment	3,942	3,993	3,882
Total depreciation and amortization	$ 15,045	$ 12,853	$ 9,577

Property and equipment and rental equipment with associated accumulated depreciation is summarized below as of December 31, 2022 and 2021, respectively.

(amounts in thousands)	December 31,	
Property and equipment	**2022**	**2021**
Rental equipment, net of allowances of $2,255 and $1,290, respectively	$ 61,679	$ 59,073
Other property and equipment	33,434	31,522
Property and equipment	95,113	90,595
Accumulated depreciation		
Rental equipment	31,320	33,355
Other property and equipment	20,524	18,314
Accumulated depreciation	51,844	51,669
Property and equipment, net		
Rental equipment, net of allowances of $2,255 and $1,290, respectively	30,359	25,718
Other property and equipment	12,910	13,208
Property and equipment, net	$ 43,269	$ 38,926

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.

On December 19, 2022, the Company determined to dispose of the technology intangible assets previously acquired from New Aera related to the Tidal Assist® Ventilator (TAV®) technology by ceasing development of such assets and abandoning the TAV program (the Disposal Determination). Prior to December 19, 2022, the TAV intangible asset was held and used, including ongoing research and development and no significant revenue. The Company made the Disposal Determination based on the Company's assessment that continued development of the assets would not be economically feasible. The assessment considered many factors, including 1) the lack of compatibility and functionality of the technology intangible asset within the Company's existing product portfolio, 2) the lack of commercial potential of such products that were not approved for ventilation Medicare reimbursement and a negative litigation outcome that occurred subsequent to the approved coding process, and 3) the substantial additional investment that would be required in order to attempt to achieve any commercial potential with substantial risk that no benefit would ever be achievable. There had been no significant revenue associated with the sale of products developed from the technology intangible asset acquired from New Aera to date and the Company does not expect any revenue from such products going forward. Upon abandonment, the Company recognized a loss on disposal of $52,161 in our consolidated statements of loss for the year ended December 31, 2022 for intangible assets, inventories, fixed assets, and construction in process associated with the TAV technology. As a result of no future sales, the fair value of the earnout resulted in a benefit of $13,687 to general and administrative expense during the fourth quarter of 2022.

During the year ended December 31, 2021, the Company determined that an impairment indicator was present related to TAV developments as a result of the court order to dismiss the Company's preliminary injunction related to the Department of Health and Human Services and the Centers for Medicare and Medicaid Services lawsuit. The relevant long-lived asset grouping was evaluated for impairment. An undiscounted cash flow analysis demonstrated sufficient undiscounted cash flows in excess of the asset group's carrying value. Estimates and significant assumptions included in the long-lived asset impairment analysis included identification of the asset group and undiscounted cash flow projections. The Company concluded that its definite-lived intangible assets and long-lived assets were not impaired based on the results of the quantitative analyses performed. No impairments were recorded during the years ended December 31, 2022, 2021 or 2020, except for the loss on disposal of the intangible asset discussed above.

Goodwill and other identifiable 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. The Company periodically reviews the carrying value of long-lived assets to determine whether or not impairment to such value has occurred. If the carrying amount of goodwill exceeds the implied estimated fair value, an impairment charge to current operations is recorded to reduce the carrying value to the implied estimated fair value. There were no accumulated impairment losses as of December 31, 2022 or 2021.

The Company will first assess qualitative factors to determine whether it is more likely than not that the fair value is less than its carrying amount. If, based on a review of qualitative factors, it is more likely than not that the fair value is less than its carrying amount, the Company will use a quantitative approach, and calculate the fair value and compare it to its carrying amount. If the fair value exceeds the carrying amount, there is no indication of impairment. If the carrying amount exceeds the fair value, an impairment loss is recorded equal to the difference.

The Company performed an assessment of qualitative factors and determined that no events or circumstances existed that would lead to a determination that it is more likely than not that the fair value of indefinite-lived assets were less than the carrying amount. As a result of the TAV technology intangible asset disposal, a quantitative analysis was required to be performed as of December 31, 2022 and concluded that there was no impairment. A quantitative analysis was not required to be performed as of December 31, 2021.

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 relationships 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.

Research and development

Research and development costs are expensed as incurred.

Advertising costs

Advertising costs, which approximated $33,265, $35,183 and $34,180 during the years ended December 31, 2022, 2021 and 2020, 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 loss.

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 taxes 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 loss.

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), net in the consolidated statements of comprehensive loss.

Government grants

The Company may receive cash payments from government grants during a public health emergency (PHE). The Company considers the nature and substance of the government grant and records the cash payment in accordance with the terms and conditions of the grant. Income is deferred until all considerations required for receiving the grant are met and is recognized in the consolidated statements of comprehensive loss based on the nature of the terms and conditions of the grant. In 2020, the Company received a grant of $6,200 from the Public Health and Social Services Emergency Fund (Relief Fund), which was among the provisions of the Coronavirus Aid, Relief, and Economic Security Act (CARES) Act signed into law on March 27, 2020. During 2020, the Company recorded $5,300 in other income, which was associated with lost revenues from the COVID-19 PHE, and a $900 benefit in general and administrative expense due to COVID-19 PHE related costs incurred in the period.

Loss per share

Loss 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 loss per share when their effect is dilutive.

Basic loss per share is calculated using the Company's weighted-average outstanding common shares. Diluted loss 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:

	Years ended December 31,		
(amounts in thousands, except share and per share amounts)	**2022**	**2021**	**2020**
Numerator—basic and diluted:			
Net loss	$ (83,772)	$ (6,333)	$ (5,829)
Denominator:			
Weighted-average common shares - basic common stock [1]	22,852,571	22,490,027	21,980,326
Weighted-average common shares - diluted common stock	22,852,571	22,490,027	21,980,326
Net loss per share - basic common stock	$ (3.67)	$ (0.28)	$ (0.27)
Net loss per share - diluted common stock [2]	$ (3.67)	$ (0.28)	$ (0.27)
Denominator calculation from basic to diluted:			
Weighted-average common shares - basic common stock [1]	22,852,571	22,490,027	21,980,326
Stock options and other dilutive awards	115,155	166,258	64,471
Weighted-average common shares - diluted common stock	22,967,726	22,656,285	22,044,797
Shares excluded from diluted weighted-average shares:			
Stock options	329,586	151,344	467,378
Restricted stock units and restricted stock awards	528,398	167,237	292,795
Shares excluded from diluted weighted-average shares	857,984	318,581	760,173

(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.
(2)Due to net losses for the years ended December 31, 2022, 2021 and 2020, diluted loss per share is the same as basic.

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.

3. Goodwill and other identifiable intangible assets

Goodwill

The changes in the carrying amount of goodwill for the years ended December 31, 2022 and 2021 were as follows:

(amounts in thousands)	
Balance as of December 31, 2020	$ 33,165
Translation adjustment	(186)
Balance as of December 31, 2021	$ 32,979
Translation adjustment	(127)
Balance as of December 31, 2022	$ 32,852

As of December 31, 2022, the Company had no accumulated impairment losses related to goodwill.

Intangible assets

There were no accumulated impairment losses related to the Company's intangible assets as of December 31, 2022 and 2021. Amortization expense for intangible assets for the years ended December 31, 2022, 2021 and 2020 was as follows:

	Years ended December 31,		
(amounts in thousands)	**2022**	**2021**	**2020**
Research and development expense	$ 7,813	$ 7,813	$ 7,800
Sales and marketing expense	116	181	204
General and administrative expense	540	781	1,000
Total	$ 8,469	$ 8,775	$ 9,004

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

(amounts in thousands) **December 31, 2022**	**Average estimated useful lives (in years)**	**Gross carrying amount**	**Accumulated amortization**	**Net amount**
Licenses	10	$ 185	183	$ 2
Patents and websites	5	4,514	4,353	161
Customer relationships	4	1,284	1,284	—
Commercials	2-3	256	242	14
Total		$ 6,239	$ 6,062	$ 177

(amounts in thousands) **December 31, 2021**	**Average estimated useful lives (in years)**	**Gross carrying amount**	**Accumulated amortization**	**Net amount**
Technology	10	$ 77,700	$ 18,454	$ 59,246
Licenses	10	185	180	5
Patents and websites	5	4,519	3,746	773
Customer relationships	4	1,361	1,361	—
Commercials	2-3	799	676	123
Total		$ 84,564	$ 24,417	$ 60,147

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

(amounts in thousands)	December 31,
2023	$ 87
2024	67
2025	19
2026	4
2027	—
Thereafter	—
Total	$ 177

4. Current liabilities

Accounts payable and accrued expenses as of December 31, 2022 and 2021 consisted of the following:

	December 31,	
(amounts in thousands)	**2022**	**2021**
Accounts payable	$ 18,237	$ 10,258
Accrued inventory (in-transit and unvouchered receipts) and trade payables	10,837	12,488
Accrued purchasing card liability	2,606	1,488
Accrued franchise, sales and use taxes	492	486
Other accrued expenses	1,802	969
Accounts payable and accrued expenses	$ 33,974	$ 25,689

Accrued payroll as of December 31, 2022 and 2021 consisted of the following:

	December 31,	
(amounts in thousands)	**2022**	**2021**
Accrued bonuses	$ 2,620	$ 8,274
Accrued wages and other payroll related items	4,967	5,469
Accrued vacation	3,133	2,894
Accrued employee stock purchase plan deductions	470	670
Accrued payroll	$ 11,190	$ 17,307

5. Leases

The Company has entered into operating leases primarily for commercial buildings. These leases have terms which range from 3 years to 11 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 certain that the Company will exercise the extension options. 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.

Rent expense, including short-term lease cost, was $3,870, $4,095, and $2,864 for the years ended December 31, 2022, 2021 and 2020, respectively.

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

(amounts in thousands)	**Year ended December 31, 2022**	**Year ended December 31, 2021**
Cash paid for operating lease liabilities	$ 3,964	$ 3,319
Operating lease cost	3,828	3,854
Non-cash right-of-use assets obtained in exchange for new operating lease obligations	225	19,417
Weighted-average remaining lease term	2.3 years	2.8 years
Weighted-average discount rate	2.9 %	2.9 %

Maturities of lease liabilities due in the 12-month period ending December 31,		
2023	$	3,974
2024		3,683
2025		2,718
2026		2,708
2027		2,745
Thereafter		9,355
		25,183
Less imputed interest		(1,904)
Total lease liabilities	$	23,279
Operating lease liability - current	$	3,515
Operating lease liability - noncurrent		19,764
Total lease liabilities	$	23,279

6. Income taxes

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

	Years ended December 31,		
(amounts in thousands)	**2022**	**2021**	**2020**
United States	$ (84,422)	$ 7,621	$ (6,464)
Foreign	1,154	1,038	1,184
Income (loss) before provision for income taxes	$ (83,268)	$ 8,659	$ (5,280)

The provision for income taxes consists of the following:

(amounts in thousands)	**Years ended December 31,**		
Current tax expense (benefit)	**2022**	**2021**	**2020**
Federal	$ —	$ —	$ (74)
State	201	271	198
Foreign	303	266	381
Total current tax expense	504	537	505
Deferred tax expense (benefit)			
Federal	—	10,263	309
State	—	4,194	(193)
Foreign	—	(22)	(72)
Total deferred tax expense	—	14,435	44
Interest and penalties	—	20	—
Provision for income taxes	$ 504	$ 14,992	$ 549

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

(amounts in thousands)	As of December 31,	
Deferred tax assets (liabilities)	**2022**	**2021**
Accrued expenses	$ 10,600	$ 10,575
Net operating loss and credit carryforward	27,824	21,138
Allowance, reserves and other	2,784	2,668
Stock-based compensation	4,042	2,665
Intangible amortization	2,045	—
Lease liability	5,674	6,507
Capitalized R&D under Sec 174	2,915	—
Deferred tax assets	55,884	43,553
Property, plant, and equipment	(8,674)	(7,664)
Intangible amortization	—	(12,389)
Right-of-use asset	(5,277)	(6,077)
Deferred tax liabilities	(13,951)	(26,130)
Valuation allowance	(41,933)	(17,423)
Total	$ —	$ —

Reconciliation of the federal statutory income tax rate to the effective income tax rate for the years ended December 31, 2022, 2021 and 2020 is as follows:

	Years ended December 31,		
	2022	**2021**	**2020**
U.S. Statutory rate	21.00 %	21.00 %	21.00 %
State income taxes, net of federal benefit	3.53 %	-1.39 %	-3.86 %
Stock-based compensation	-1.02 %	-21.72 %	-16.80 %
R&D credit, net of reserve	1.32 %	-5.95 %	-8.11 %
Change in fair value	3.88 %	-28.19 %	-4.19 %
Nondeductible compensation	-1.50 %	7.04 %	—
Valuation allowance	-27.75 %	201.69 %	—
Other	-0.07 %	0.63 %	1.57 %
Effective income tax rate	-0.61 %	173.11 %	-10.39 %

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 2019 for federal and prior to 2016 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, 2022, the Company had $84,362 and $40,194 of federal and state net operating loss carryforwards, respectively, and $76,566 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, 2022, the Company had federal and California research and development credit carryforward of $5,503 and $4,628, respectively. The federal credit will begin to expire in 2023; the California credit has indefinite carryforward. As of December 31, 2022, the Company had a federal foreign tax credit carryforward of $774. The federal credit will begin to expire in 2037.

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 recognizes deferred tax assets to the extent it believes these assets are more likely than not to be realized. In making such a determination, the Company considers all available positive and negative evidence, including future reversals of existing taxable temporary differences, projected future taxable income, tax-planning strategies, and results of recent operations. The amount of deferred tax assets considered realizable is subject to adjustment in future periods if estimates of future taxable income are reduced. As of December 31, 2021, the Company recorded a full valuation allowance of $17,423. As of December 31, 2022, the Company again determined that net deferred tax assets are not more likely than not realizable based on cumulative three-year pretax losses, projected future taxable losses primarily due to planned strategic investments in future periods, and the impact of the COVID-19 pandemic, including related supply chain impacts on parts availability and cost inflation. Accordingly, the Company recorded a valuation allowance of $41,933 as of December 31, 2022. The Company's valuation allowance may increase or decrease during the next 12 months based on future operating results. The increase in valuation allowance of $24,510 is attributable to losses generated in the current year.

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

Included in the balance of unrecognized tax benefits as of December 31, 2022, 2021 and 2020, were $2,366, $2,078 and $1,932, 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,		
	2022	**2021**	**2020**
Reconciliation of liability for unrecognized tax benefits			
Balance at beginning of period	$ 2,078	$ 1,932	$ 1,889
Additions based on tax positions related to current year	242	146	70
Reductions based on tax positions related to prior year	—	—	(181)
Additions based on tax positions related to prior year	46	—	154
Balance at end of period	$ 2,366	$ 2,078	$ 1,932

On August 16, 2022, the Inflation Reduction Act of 2022 (IRA) was signed into law. The IRA contains a number of revisions to the Internal Revenue Code, including a 15% corporate minimum income tax and a 1% excise tax on corporate stock repurchases in tax years beginning after December 31, 2022. The Company evaluated the provisions of the IRA and identified no impact to the Company's provision for income taxes, effective tax rate, unrecognized tax benefits or deferred income tax positions for the year ended December 31, 2022.

7. 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, 2022 and 2021, 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, 2022, 2021 and 2020.

Stock incentive plans

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, 2022, options to purchase 57,298 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, 2022, awards with respect to 1,208,811 shares of the Company's common stock were outstanding, and 828,309 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 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 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 2022, 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, 2022, 2021 and 2020 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, 2019	980,884	$0.75-$83.30	$ 35.24	2.84	$ 34.07
Exercised	(18,626)	1.17-44.19	17.81		
Forfeited	(6,779)	44.19-56.72	48.23		
Outstanding as of December 31, 2020	955,479	0.75-83.30	35.49	1.85	11.81
Vested and exercisable as of December 31, 2020	955,479	0.75-83.30	35.49	1.85	11.81
Vested and expected to vest as of December 31, 2020	955,479	0.75-83.30	35.49	1.85	11.81
Outstanding as of December 31, 2020	955,479	0.75-83.30	35.49	1.85	11.81
Exercised	(486,038)	0.75-46.66	28.19		
Forfeited	(10,000)	83.30	83.30		
Outstanding as of December 31, 2021	459,441	1.17-83.30	42.18	1.36	4.31
Vested and exercisable as of December 31, 2021	459,441	1.17-83.30	42.18	1.36	4.31
Vested and expected to vest as of December 31, 2021	459,441	1.17-83.30	42.18	1.36	4.31
Outstanding as of December 31, 2021	459,441	1.17-83.30	42.18	1.36	4.31
Exercised	(14,154)	1.17-8.37	3.14		
Forfeited	(15,417)	38.54-44.19	43.27		
Expired	(81,586)	38.54-43.21	40.08		
Outstanding as of December 31, 2022	348,284	1.17-83.30	44.21	0.43	2.07
Vested and exercisable as of December 31, 2022	348,284	1.17-83.30	44.21	0.43	2.07
Vested and expected to vest as of December 31, 2022	348,284	$1.17-$83.30	$ 44.21	0.43	$ 2.07

The total intrinsic value of options exercised during the years ended December 31, 2022, 2021, and 2020 was $309, $14,524 and $494, respectively. As of December 31, 2022, all stock-based compensation expense for options granted under the Plans was recognized.

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 three-year and four-year service periods, 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, 2022, 2021 and 2020 is summarized below:

Restricted stock units	Time-based	Performance and time-based	Total	Weighted-average grant date fair value per share
Unvested restricted stock units as of December 31, 2019	108,976	3,134	112,110	$83.48
Granted	210,622	88,458	299,080	43.52
Vested	(49,636)	—	(49,636)	83.31
Forfeited/canceled	(24,500)	(3,134)	(27,634)	70.60
Unvested restricted stock units as of December 31, 2020	245,462	88,458	333,920	$49.29
Unvested and expected to vest restricted stock units outstanding as of December 31, 2020			246,420	$49.82
Unvested restricted stock units as of December 31, 2020	245,462	88,458	333,920	$49.29
Granted	240,044	88,902	328,946	56.01
Vested	(109,504)	—	(109,504)	52.79
Forfeited/canceled	(86,836)	(78,248)	(165,084)	46.88
Unvested restricted stock units as of December 31, 2021	289,166	99,112	388,278	$54.81
Unvested and expected to vest restricted stock units outstanding as of December 31, 2021			331,358	$54.98
Unvested restricted stock units as of December 31, 2021	289,166	99,112	388,278	$54.81
Granted	769,976	164,722	934,698	29.76
Vested	(142,942)	(37,678)	(180,620)	55.04
Forfeited/canceled	(95,259)	(42,959)	(138,218)	45.10
Unvested restricted stock units as of December 31, 2022	820,941	183,197	1,004,138	$32.72
Unvested and expected to vest restricted stock units outstanding as of December 31, 2022			840,413	$32.37

Restricted stock awards	Time-based	Performance and time-based	Total	Weighted-average grant date fair value per share
Unvested restricted stock awards outstanding as of December 31, 2019	71,070	62,628	133,698	$95.74
Vested	(28,994)	—	(28,994)	89.37
Forfeited/canceled	—	(29,273)	(29,273)	110.27
Unvested restricted stock awards outstanding as of December 31, 2020	42,076	33,355	75,431	$93.96
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2020			44,159	$85.90
Unvested restricted stock awards outstanding as of December 31, 2020	42,076	33,355	75,431	$93.96
Vested	(15,728)	—	(15,728)	91.17
Forfeited/canceled	(15,932)	(27,726)	(43,658)	98.05
Unvested restricted stock awards outstanding as of December 31, 2021	10,416	5,629	16,045	$87.12
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2021			15,532	$90.08
Unvested restricted stock awards outstanding as of December 31, 2021	10,416	5,629	16,045	$87.12
Vested	(4,496)	(5,629)	(10,125)	99.46
Forfeited/canceled	(5,134)	—	(5,134)	74.25
Unvested restricted stock awards outstanding as of December 31, 2022	786	—	786	$59.55
Unvested and expected to vest restricted stock awards outstanding as of December 31, 2022			748	$60.39

(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, 2022, the unrecognized compensation cost related to unvested employee restricted stock units and restricted stock awards was $20,539, excluding estimated forfeitures. This amount is expected to be recognized over a weighted-average period of 2.0 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, 2022, a total of 507,538 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 2022, 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, 2022, 2021 and 2020, was as follows:

(amounts in thousands)	Years ended December 31,		
Stock-based compensation expense by type of award:	**2022**	**2021**	**2020**
Stock option plan awards	$ —	$ —	$ 709
Restricted stock units and restricted stock awards	11,748	10,229	6,717
Employee stock purchase plan	535	714	777
Total stock-based compensation expense	$ 12,283	$ 10,943	$ 8,203

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 year ended December 31, 2020 has been reduced for estimated forfeitures of stock option plan awards at a rate of 7.3%. The employee stock-based compensation expense recognized for the years ended December 31, 2022, 2021 and 2020 has been reduced for estimate forfeitures of restricted stock at a rate of 4.1%, 4.1% and 4.7%, 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, 2022, 2021 and 2020, 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,		
(amounts in thousands)	**2022**	**2021**	**2020**
Cost of revenue	$ 1,127	$ 1,106	$ 698
Research and development	1,591	1,276	969
Sales and marketing	2,785	2,388	2,208
General and administrative	6,780	6,173	4,328
Total stock-based compensation expense	$ 12,283	$ 10,943	$ 8,203

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. During the years ended December 31, 2022, 2021 and 2020, the Company did not grant any stock option awards.

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.

	2022	**2021**	**2020**
Expected term (years)	0.50	0.50	0.50
Risk free interest rate	0.07-3.51%	0.07-0.12%	0.12-1.75%
Expected dividend yield	None	None	None
Volatility	47.97-59.21%	44.59-83.92%	47.00-83.92%

8. Commitments and contingencies

Purchase obligations

The Company had approximately $109,900 of outstanding purchase orders due within one year with its outside vendors and suppliers as of December 31, 2022.

Warranty obligation

The following table identifies the changes in the Company's aggregate product warranty liabilities for the years ended December 31, 2022, 2021 and 2020, respectively:

	December 31,		
(amounts in thousands)	**2022**	**2021**	**2020**
Product warranty liability at beginning of period	$ 13,726	$ 14,394	$ 12,571
Accruals for warranties issued	10,416	9,168	9,462
Adjustments related to preexisting warranties (including changes in estimates)	8,234	(597)	(754)
Settlements made (in cash or in kind)	(12,463)	(9,239)	(6,885)
Product warranty liability at end of period	$ 19,913	$ 13,726	$ 14,394

During the year ended December 31, 2022, the Company recorded $8,234 of changes in estimates related to preexisting warranties due to data and information that became available during the current year. The changes in estimates were primarily due to the increased cost to repair for all products stemming from the current year inflationary environment and increased product failure rates.

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. Compliance with government 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) was enacted to ensure health insurance portability, reduce healthcare fraud and abuse, guarantee security and privacy of health information, and enforce standards for health information. The Health Information Technology for Economic and Clinical Health Act (HITECH Act), in part, imposes notification requirements of certain security breaches relating to protected health information. The Company is not aware of any pending claims against it under the HIPAA and HITECH regulations that are applicable to the Company's business.

Legal proceedings

Civil investigative demand

On June 21, 2022, the Company received a civil investigative demand (CID) from the United States Attorney's Office for the Northern District of Iowa. The CID states that it was issued in a False Claims Act investigation to determine whether there is or has been a violation of the False Claims Act and that the investigation involves concerns of inappropriate kickbacks provided by certain manufacturers of portable oxygen concentrators and related products in violation of the Anti-Kickback Statute. The CID followed informal requests from the United States Attorney's Office for the Northern District of Iowa begun in late 2020, with which the Company voluntarily complied, to obtain information concerning the Company's participation in (i) zero-interest or below market-rate loans through a third party lender to finance customer purchases; (ii) guaranteeing the obligation of a customer to a finance company in connection with financing of purchases of Company equipment; and (iii) entering into an agreement with a customer that included marketing, exclusivity, discount, and favorable financing terms. The Company is cooperating in the investigation. The Company is currently unable to predict the outcome of this investigation or whether qui tam or other litigation is probable. Regardless of the outcome, this inquiry has the potential to have an adverse impact on the Company due to any related defense and settlement costs, diversion of management resources, and other factors.

Other litigation

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.

9. Foreign currency exchange contracts and hedging

As of December 31, 2022 and December 31, 2021, the Company's total non-designated and designated derivative contracts had notional amounts totaling approximately $37,314 and $0, respectively, and $2,318 and $23,253, respectively. These contracts were comprised of offsetting contracts with the same counterparty, each expires within one month. During the years ended December 31, 2022, 2021, and 2020, these contracts had, net of tax, an unrealized loss of $1,140, an unrealized gain of $1,793 and an unrealized loss of $289, 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 year ended December 31, 2022, there were three ineffective portions relating to these hedges. During the years ended December 31, 2021 and 2020, there were no ineffective portions relating to these hedges and the hedges remained effective through their respective settlement dates. As of December 31, 2022, the Company had no designated hedges and three non-designated hedges. As of December 31, 2021, the Company had thirteen designated hedges and two non-designated hedges.

Schedule II: Valuation and Qualifying Accounts

(amounts in thousands)	Balance at Beginning of Year	Additions	Deletions	Balance at End of Year
Year ended December 31, 2022				
Allowance for doubtful accounts [1]	$ 52	$ 97	$ 72	$ 77
Allowance for sales returns [2]	810	12,927	13,254	483
Allowance for rental asset loss [3]	1,290	2,940	1,975	2,255
Year ended December 31, 2021				
Allowance for doubtful accounts [1]	$ 52	$ 60	$ 60	$ 52
Allowance for sales returns [2]	742	11,034	10,966	810
Allowance for rental asset loss [3]	575	1,153	438	1,290
Year ended December 31, 2020				
Allowance for doubtful accounts [1]	$ 205	$ 187	$ 340	$ 52
Allowance for sales returns [2]	1,163	10,299	10,720	742
Allowance for rental revenue adjustments [4]	411	2,579	2,594	396
Allowance for rental asset loss [3]	395	559	379	575

(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 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.
(4)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.

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.	10-K	3.1	02/25/20
3.2	Amended and Restated Bylaws of the Registrant.	8-K	3.1	11/02/22
4.1	Specimen Common Stock Certificate of the Registrant.	S-1/A	4.1	01/16/14
4.2	Description of Securities.	10-K	4.4	02/25/20
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
10.14	License Agreement, dated July 23, 2007, between the Registrant and Air Products and Chemicals, Inc.	S-1/A	10.19	12/23/13

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
10.15	Amendment to License Agreement, dated October 23, 2009, between the Registrant and Air Products and Chemicals, Inc.	S-1	10.20	11/27/13
10.16	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
10.17	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
10.18+	Amended and Restated Employment and Severance Agreement, effective January 1, 2017, between the Registrant and Byron Myers.	10-K	10.28	02/28/17
10.19	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
10.20	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
10.21	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
10.22	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
10.23	Lease Agreement, dated August 29, 2019, by and between the Company, and TCG Industrial Shiloh LLC.	10-Q	10.1	11/05/19
10.24	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
10.25+	Employment and Severance Agreement, dated August 17, 2018, between the Registrant and Bart Sanford.	10-Q	10.2	11/06/18
10.26+	Employment and Severance Agreement, dated August 17, 2020, between the Company and Arron Retterer.	10-Q	10.1	11/04/20
10.27+	Employment and Severance Agreement between the Company and Nabil Shabshab, dated January 22, 2021.	8-K	10.1	01/25/21
10.28	First Amendment to Agreement and Plan of Merger, dated August 6, 2019 between the Company and New Aera, dated January 18, 2021.	10-K	10.40	02/24/21
10.29+	Employment and Severance Agreement between the Company and George Parr, dated April 12, 2021.	10-Q	10.6	05/04/21
10.30+	Employment and Severance Agreement, between the Company and Stanislav Glezer, dated June 21, 2021.	10-Q	10.1	08/04/21
10.31+	Employment and Severance Agreement, between the Company and Jason M. Somer, dated July 12, 2021.	10-Q	10.2	08/04/21
10.32	First Amendment to Lease dated as of June 17, 2021, 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	11/04/21

Exhibit Number	Description	Incorporated by Reference From Form	Incorporated by Reference From Exhibit Number	Date Filed
10.33*	Private Label Distribution Agreement, by and between the Company and OxyGo HQ Florida, LLC, dated as of September 23, 2021.	10-Q	10.2	11/04/21
10.34+	Transition Agreement and Release, dated September 30, 2021, between the Company and Brenton Taylor.	10-Q	10.3	11/04/21
10.35+	Amended and Restated Employment and Severance Agreement, dated October 11, 2021, between the Company and Stanislav Glezer.	10-Q	10.4	11/04/21
10.36+	Offer Letter by and between the Company and Michael K. Sergesketter, dated December 10, 2021.	8-K	10.1	12/13/21
10.37+	Transition Agreement and Release between the Company and Alison Bauerlein, dated December 10, 2021.	8-K	10.2	12/13/21
10.38+	Consulting Agreement by and between the Company and Raymond Huggenberger, effective December 29, 2021.	8-K	10.1	12/30/21
10.39+	Employment and Severance Agreement by and between the Company and Kristin A. Caltrider, effective March 21, 2022.	8-K	10.1	03/04/22
10.40+	Transition Agreement and Release between the Company and Bart Sanford, dated February 6, 2023.	8-K	10.1	02/10/23
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 Principal 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 Principal 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 Principal Executive Officer and Principal Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.	Filed Herewith		
101.SCH	Inline XBRL Taxonomy Extension Schema Document			
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document			
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document			
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document			
101.DEF	Inline 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 Item 601(b)(10) of Regulation S-K. The Company agrees to furnish to the Securities and Exchange Commission a copy of any omitted portions of the exhibit upon request.
~ 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/ Nabil Shabshab
Nabil Shabshab
Chief Executive Officer
President
Director
(Principal Executive Officer)

Dated: February 24, 2023

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Nabil Shabshab and Kristin Caltrider, 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
/s/ Nabil Shabshab Nabil Shabshab	Chief Executive Officer, President and Director *(Principal Executive Officer)*	February 24, 2023
/s/ Kristin Caltrider Kristin Caltrider	Chief Financial Officer *(Principal Accounting and Financial Officer)*	February 24, 2023
/s/ Elizabeth Mora Elizabeth Mora	Chairperson of the Board	February 24, 2023
/s/ Glenn Boehnlein Glenn Boehnlein	Director	February 24, 2023
/s/ Kevin King Kevin King	Director	February 24, 2023
/s/ Mary Katherine Ladone Mary Katherine Ladone	Director	February 24, 2023
/s/ Heather Rider Heather Rider	Director	February 24, 2023
/s/ Kristen Miranda Kristen Miranda	Director	February 24, 2023

Exhibit 23.1

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 24, 2023, 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, 2022.

/s/ DELOITTE & TOUCHE LLP

Los Angeles, California
February 24, 2023

Exhibit 31.1

CERTIFICATION OF PRINCIPAL 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

I, Nabil Shabshab, 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 24, 2023

By: /s/ Nabil Shabshab
Nabil Shabshab
Chief Executive Officer
President
Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL 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

I, Kristin Caltrider, 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 24, 2023

By: /s/ Kristin Caltrider
Kristin Caltrider
Chief Financial Officer
Executive Vice President
Corporate Treasurer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATIONS OF PRINCIPAL EXECUTIVE OFFICER AND PRINCIPAL FINANCIAL OFFICER PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

I, Nabil Shabshab, 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, 2022 (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 24, 2023

By: /s/ Nabil Shabshab
Nabil Shabshab
Chief Executive Officer
President
Director

I, Kristin Caltrider, 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, 2022 (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 24, 2023

By: /s/ Kristin Caltrider
Kristin Caltrider
Chief Financial Officer
Executive Vice President
Corporate Treasurer