UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, DC 20549

FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 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: 001-37685

PAVMED INC.
(Exact Name of Registrant as Specified in Its Charter)

Delaware (State or Other Jurisdiction of Incorporation or Organization)	**47-1214177** (IRS Employer Identification No.)
360 Madison Avenue **25th Floor** **New York, NY** (Address of Principal Executive Offices)	**10017** (Zip Code)

(212) 949-4319
(Registrant's Telephone Number, Including Area Code)

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

Title of each Class	Trading Symbol(s)	Name of each Exchange on which Registered
Common Stock, $0.001 par value per share	PAVM	The NASDAQ Stock Market LLC
Series Z Warrants, each to purchase one share of Common Stock	PAVMZ	The NASDAQ Stock Market LLC

Securities registered under Section 12(g) of the Exchange 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 Exchange 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 Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No □

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or 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 filed	□
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(c) 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 ⊠

As of June 30, 2022, the last business day of the registrant's most recently completed second fiscal quarter, the aggregate market value of the registrant's voting stock held by non-affiliates was approximately $70.5 million, based on 74,958,765 shares of common stock held by non-affiliates and a last reported sales price per share of the registrant's common stock of $0.94 on such date.

As of March 9, 2023, there were 98,419,795 shares of the registrant's Common Stock, par value $0.001 per share, issued and outstanding (with such number of shares inclusive of shares of common stock underlying unvested restricted stock awards granted under the PAVmed Inc. 2014 Long-Term Incentive Equity Plan as of such date).

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive proxy statement for its 2023 annual meeting of stockholders are incorporated by reference into Part III of this Form 10-K where indicated. Such definitive proxy statement will be filed with the U.S. Securities and Exchange Commission within 120 days after the year ended December 31, 2022.

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FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K (this "Form 10-K") of PAVmed Inc. ("we", "us", "our" or "PAVmed" or the "Company"), contains forward-looking statements that involve substantial risks and uncertainties. All statements, other than statements of historical facts, contained in this Form 10-K, including statements regarding our future results of operations and financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words "may," "will," "should," "expects," "plans," "anticipates," "could," "intends," "target," "projects," "contemplates," "believes," "estimates," "predicts," "potential" or "continue" or the negative of these terms or other similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Forward-looking statements are not guarantees of future performance and the Company's actual results may differ significantly from the results discussed in the forward-looking statements. Factors that might cause such differences include, but are not limited to, those discussed in Item 1A of Part I of this Form 10-K under the heading "Risk Factors," which are incorporated herein by reference.

Important factors that may affect our actual results include:

- our limited operating history;
- our financial performance, including our ability to generate revenue;
- our ability to obtain regulatory approval for the commercialization of our products;
- the ability of our products to achieve market acceptance;
- our success in retaining or recruiting, or changes required in, our officers, key employees or directors;
- our potential ability to obtain additional financing when and if needed;
- our ability to protect our intellectual property;
- our ability to complete strategic acquisitions;
- our ability to manage growth and integrate acquired operations;
- the potential liquidity and trading of our securities;
- our regulatory and operational risks;
- cybersecurity risks;
- risks related to the COVID-19 pandemic; and
- our estimates regarding expenses, future revenue, capital requirements and needs for additional financing.

In addition, our forward-looking statements do not reflect the potential impact of any future financings, acquisitions, mergers, dispositions, joint ventures or investments we may make.

We may not actually achieve the plans, intentions, and/or expectations disclosed in our forward-looking statements, and you should not place undue reliance on our forward-looking statements. You should read this Annual Report on Form 10-K and the documents we have filed as exhibits to this Annual Report on Form 10-K completely and with the understanding our actual future results may be materially different from what we expect. We do not assume any obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.

PART I

Item 1. Business

Background and Overview

PAVmed is a highly differentiated, multi-product, commercial-stage medical technology company organized to advance a broad pipeline of innovative medical technologies from concept to commercialization, employing a business model focused on capital efficiency and speed to market.

Our current central focus is predominantly on commercial expansion and execution including the acceleration of EsoGuard and Veris Cancer Care Platform commercialization. As resources permit, we will continue to explore internal and external innovations that fulfill our project selection criteria without limiting ourselves to any target specialty or condition. More broadly, we strive to maintain balance within our pipeline with shorter-term, lower-risk projects with the prospect for rapid commercialization and revenue generation supporting development of longer-term projects. At the same time, we are continuously re-assessing each project's long-term commercial potential relative to other projects in our pipeline, accelerating or decelerating the project and reallocating resources accordingly.

The Company operates in one segment as a medical technology company, with the following lines of business: Diagnostics, Medical Devices and Digital Health. Below is a summary of each of our key products within these sectors, including in particular EsoGuard and the Veris Cancer Care Platform, currently our two leading products. We are also pursuing a number of research and development project and product opportunities across these three lines of business, which have either been developed internally or have been presented to us by clinician innovators and academic medical institutions for consideration.

EsoGuard and EsoCheck

We believe that the flagship product of our majority-owned subsidiary Lucid Diagnostics Inc. (Nasdaq: LUCD) ("Lucid"), the EsoGuard Esophageal DNA Test, performed on samples collected with the EsoCheck Esophageal Cell Collection Device, constitutes the first and only commercially available diagnostic test capable of serving as a widespread screening tool to prevent esophageal adenocarcinoma ("EAC") deaths, through early detection of esophageal precancer in at-risk gastroesophageal reflux disease ("GERD," also commonly known as chronic heartburn, acid reflux or simply reflux) patients.

EsoGuard is a bisulfite-converted next-generation sequencing (NGS) DNA assay performed on surface esophageal cells collected with EsoCheck. It quantifies methylation at 31 sites on two genes, Vimentin (VIM) and Cyclin A1 (CCNA1). The assay was evaluated in a 408-patient multicenter case-control study published in Science Translational Medicine and showed greater than 90% sensitivity and specificity at detecting esophageal precancer and all conditions along the BE-EAC spectrum, including on samples collected with EsoCheck (Moinova, et al. Sci Transl Med. 2018 Jan 17;10(424): eaao5848). EsoGuard is commercially available in the U.S. as a Laboratory Developed Test (LDT) performed at our CLIA-certified laboratory. Cell samples, including those collected with EsoCheck, as discussed below, are sent to our laboratory for testing and analyses using our proprietary EsoGuard NGS DNA assay.

EsoCheck is an FDA 510(k) and CE Mark cleared noninvasive swallowable balloon capsule catheter device capable of sampling surface esophageal cells in a less than five-minute office procedure. It consists of a vitamin pill-sized rigid plastic capsule tethered to a thin silicone catheter from which a soft silicone balloon with textured ridges emerges to gently swab surface esophageal cells. When vacuum suction is applied, the balloon and sampled cells are pulled into the capsule, protecting them from contamination and dilution by cells outside of the targeted region during device withdrawal. We believe this proprietary Collect+Protect™ technology makes EsoCheck the only noninvasive esophageal cell collection device capable of such anatomically targeted and protected sampling.

EsoGuard and EsoCheck are based on patented technology licensed by Lucid from Case Western Reserve University ("CWRU"). EsoGuard and EsoCheck have been developed to provide an accurate, non-invasive, patient-friendly screening test for the early detection of adenocarcinoma of the esophagus ("EAC") and Barrett's Esophagus ("BE"), including dysplastic BE and related pre-cursors to EAC in patients with chronic gastroesophageal reflux ("GERD").

Market Opportunity

In 2023, approximately 20,000 U.S. GERD patients are projected to be diagnosed with EAC and approximately 16,000 will die from it. Over 80% of EAC patients will die within five years of diagnosis, making it the second most lethal cancer in the U.S. The U.S. incidence of EAC has increased 500% over the past four decades, while the incidences of other common cancers have declined or remained flat. In nearly all cases, EAC silently progresses until it manifests itself with new symptoms of advanced disease. EAC is nearly always invasive at diagnosis, and, unlike other common cancers, mortality rates are high even in its earlier stages.

As discussed below under the heading "Clinical Guidelines for At-Risk Population", the American Gastroenterology Association ("AGA") recently significantly expanded the target population for esophageal precancer screening, recommending screening in at-risk patients without symptoms of GERD. Based on this revision, we believe the cohort recommended for screening consists of an estimated 30 million U.S. individuals with at least 3 established risk factors for BE. Accordingly, we believe EsoGuard's total addressable U.S. market opportunity exceeds $60 billion based on an effective Medicare payment of $1,938 and the estimated 30 million U.S. patients recommended for screening by clinical practice guidelines. (In December 2019, we secured "gapfill" determination for EsoGuard's PLA code 0114U through the CMS CLFS process. This allowed us to engage directly with Medicare contractor Palmetto GBA and its MolDx Program on CMS payment and coverage. In October 2020, CMS granted EsoGuard final Medicare payment determination of $1,938.01, effective January 1, 2021.)

Unfortunately, for a variety of reasons, less than 10% of at-risk patients who are recommended for screening undergo traditional invasive upper gastrointestinal endoscopy (EGD). We believe that the profound tragedy of an EAC diagnosis is that likely death could have been prevented if the at-risk patient had been screened and then undergone surveillance and curative endoscopic esophageal ablation of dysplastic BE.

Since mortality rates are high even in early stage EAC, preventing EAC deaths requires detection and intervention at the precancer stage. Most of the necessary elements for such an early detection program are already well established—an at-risk population (at-risk GERD patients), a precancer (BE), and an intervention which can halt progression to EAC (endoscopic esophageal ablation). The only missing element for such an early detection program is a widespread screening tool that can detect BE prior to EAC.

We believe EsoGuard, used with EsoCheck, constitutes that missing element—the first and only commercially available diagnostic test capable of serving as a widespread screening tool to prevent EAC deaths through early detection of esophageal precancer and cancer in patients with 3 or more risk factors.

Clinical Guidelines for At-Risk Population

The subgroup of long-standing or severe GERD patients at-risk for BE and progression to EAC is well defined in clinical practice guidelines, including the American College of Gastroenterology (ACG) BE Guidelines. In its Recommendation 5, the ACG suggests a single screening endoscopy in patients with chronic GERD symptoms and 3 or more additional risk factors for BE, including male sex, age greater than 50 years, White race, tobacco smoking, obesity, and family history of BE or EAC in a first-degree relative.

An ACG clinical guideline entitled "*Diagnosis and Management of Barrett's Esophagus: An Updated ACG Guideline*," the first such update since 2016, was published online last year in the American Journal of Gastroenterology. The clinical guideline reiterates the ACG's long-standing recommendation for esophageal precancer screening in at-risk patients with GERD. For the first time, however, the clinical guideline also endorses nonendoscopic biomarker screening as an acceptable alternative to costly and invasive endoscopy stating that "a swallowable nonendoscopic capsule device combined with a biomarker is an acceptable alternative to endoscopy for BE." The clinical guideline specifically mentions EsoCheck, along with Lucid's EsophaCap® device, as such swallowable, nonendoscopic esophageal cell collection devices, as well as methylated DNA biomarkers such as EsoGuard. The summary of evidence for this recommendation includes a reference to the seminal NIH-funded, multicenter, case-control study published in 2018 in *Science Translational Medicine*, which demonstrated that EsoGuard is highly accurate at detecting esophageal precancer and cancer, including on samples collected with EsoCheck.

In July 2022, the AGA published in their "Clinical Practice Update on New Technology and Innovation for Surveillance and Screening in Barrett's Esophagus" updated clinical guidance that mirrors the same furnished by the ACG as described above, endorsing the use of non-endoscopic cell collection tools to screen for BE like our EsoCheck Cell Collection Device, which is cited in the update, as an acceptable alternative to endoscopy to directly address the need for noninvasive screening tools that are easy to administer, patient friendly, and cost-effective for the detection of BE. The clinical practice update by the AGA also significantly expands the target population for esophageal precancer screening, including for EsoGuard and EsoCheck, by recommending, for the first time, screening in at-risk patients without symptoms of GERD. The AGA does so by adding a history of chronic GERD as merely an additional, seventh risk factor to the six risk factors for BE and EAC that have traditionally identified at-risk symptomatic patients recommended for screening.

Commercialization

Our EsoGuard commercialization efforts span multiple channels including targeting primary care physicians and GI physicians, who have generally embraced our message that EsoGuard has the potential to expand the funnel of BE-EAC patients who will need long term EGD surveillance and, potentially, treatment with endoscopic esophageal ablation.

To assure sufficient testing capacity and geographic coverage, we have built our own network of Lucid Test Centers, staffed by Lucid-employed clinical personnel, where patients can undergo the EsoCheck procedure and have the sample sent for EsoGuard testing at Lucid's CLIA-certified laboratory. Our current test center network currently includes locations in metropolitan areas in Arizona, California, Colorado, Florida, Idaho, Illinois, Nevada, Ohio, Oregon, Texas and Utah.

In addition to our base test center network, Lucid has established a satellite test center program, whereby we are expanding our footprint by making our personnel available to perform cell collection services in physician offices. Further, we have sought to expand our outreach by successfully conducting multiple "#CheckYourFoodTube Precancer Testing Event" for organizations such as the San Antonio Fire Department, where samples are collected from the organization's employees for testing with EsoGuard at Lucid's CLIA-certified laboratory.

We have also established an EsoGuard Telemedicine Program, in partnership with UpScript, LLC, an independent third-party telemedicine provider, that accommodates EsoGuard self-referrals from direct-to-consumer marketing.

Reimbursement and Market Access

As noted above, in December 2019, we secured "gapfill" determination for EsoGuard's PLA code 0114U through the CMS CLFS process. This allowed us to engage directly with Medicare contractor Palmetto GBA and its MolDx Program on CMS payment and coverage. In October 2020, CMS granted EsoGuard final Medicare payment determination of $1,938.01, effective January 1, 2021.

A proposed Local Coverage Determination ("LCD") DL39256, entitled "*Molecular Testing for Detection of Upper Gastrointestinal Metaplasia, Dysplasia, and Neoplasia*" was published recently on the Center for Medicare and Medicaid Services ("CMS") website by MAC Palmetto GBA. The proposed LCD is a further step in Lucid's efforts to secure Medicare coverage and payment for EsoGuard. The proposed LCD, which the CMS website explicitly characterizes as a "work in progress" for "public review," outlines criteria that MolDX expects upper gastrointestinal precancer and cancer molecular diagnostic tests to meet. These criteria include active GERD with at least two risk factors, as well as evidence of analytic validity, clinical validity, and clinical utility. Although the proposed LCD indicated that it found that no currently existing test has fulfilled all criteria, it indicated that it will "monitor the evidence and will provide coverage based on the pertinent literature and society recommendations." Notably, the proposed LCD pre-dated, and therefore does not include consideration of, the most recent AGA clinical practice update endorsing swallowable, nonendoscopic capsule devices combined with a biomarker, such as EsoCheck and EsoGuard, as an alternative to endoscopy. The publication of the proposed LCD triggers a written comment period, and MolDX also held an open meeting on May 10, 2022, during which stakeholders and other interested parties will have the opportunity to address the proposed LCD. We presented at the public meeting and made a written submission during the comment period as well. A final LCD will not be issued until the MAC has had the opportunity to assess and consider all stakeholder comments.

While we await a Palmetto MolDX LCD coverage determination, Lucid is aggressively pursuing EsoGuard commercial insurer payment and coverage. Although the claim adjudication cycle can be prolonged during the early commercialization of a new test, Lucid has received out-of-network commercial insurance payments for the EsoGuard test, and has entered into agreements with insurers that provide access to, in the aggregate, over 70 million patients.

Clinical Utility and Clinical Trials

Demonstrating EsoGuard's clinical utility, which requires providing evidence that the test has a meaningful impact on clinical practice, is very important for a variety of purposes, including, importantly, for Medicare and private payor payment and coverage. It has been established that one of the most important factors to private payors in deciding whether to grant payment and coverage will be demonstration that the EsoGuard test, when ordered by physicians, provides information that can be used to identify or exclude patients who would benefit from additional management and/or treatment. Clinical utility studies are also important for general EsoGuard commercialization by facilitating physician understanding of test indications and potential benefit to the patients.

We are currently seeking to accelerate our collection of clinical utility data through a range of trials that can be efficiently executed. These efforts include a planned investigator-initiated, retrospective analysis of prospectively collected data on the approximately 400 San Antonio fire fighters who underwent testing as part of a community-sponsored cancer awareness event (in respect of which we expect to publish results in the first half of 2023); an ongoing investigator-initiated, retrospective, single-center, study with 500 patients (in respect of which we expect to publish results mid-2023), a virtual-patient randomized controlled trial with intended recruitment of 100-200 physician participants (in respect of which we expect to publish results this year); a Lucid-sponsored multi-center, prospective, observational study with 500 patients; and a Lucid-sponsored registry at existing Lucid Test Centers, whereby all patients undergoing EsoCheck testing will be given the opportunity to provide informed consent and contribute data about their risk factors, EsoGuard results, and subsequent diagnostic and/or therapeutic journey. Both Lucid-sponsored observational/registry studies expect to have preliminary results and/or interim analysis before the end of 2023.

As previously disclosed, consequently, we have decided to delay for the time being the two previously commenced clinical trials, the "EsoGuard screening study" ("BE-1") and the "EsoGuard case-control study" ("BE-2"), as we are devoting our clinical resources to the studies cited above, which we expect will more efficiently generate the clinical data we are currently prioritizing to drive EsoGuard commercialization.

Manufacturing

EsoCheck is currently manufactured for us by our partners Coastline International, a high-volume device manufacturer, and Sage Product Development. Through mid-2023, we expect to further transition from Sage to Coastline as the manufacturing process is further optimized. Our current line capacity can produce up to 25,000 units per year. With Coastline's improvement and expansion, there is capacity to scale exponentially. Our EsoGuard Specimen Kits are currently manufactured for us by our partner Path-Tec. The warehousing, logistics, fulfillment and customer support of our products is managed for us by our partners HealthLink International (a leading third-party logistics company) and Path-Tec.

License Agreement

Under the terms of Lucid's license agreement with Case Western Reserve University ("CWRU"), Lucid acquired an exclusive worldwide right to use the intellectual property rights to the EsoGuard and EsoCheck technology for the detection of changes in the esophagus and on sample preservation. Lucid is required to pay CWRU royalties on net sales of licensed products as follows: 5% of net sales of less than $100 million per year; and 8% of net sales greater than $100 million per year. Lucid is also required to pay CWRU minimum annual royalty payments as follows: $50,000 per year, beginning January 1 following the first anniversary of a commercial sale of a licensed product; $150,000 per year, if net sales of a licensed product exceed $25 million in a year; $300,000 per year, if net sales of a licensed product exceed $50 million in a year; and $600,000 per year, if net sales of a licensed product exceed $100 million in a year. Minimum yearly royalty amounts are subject to increase based on the percentage change in the CPI-W Consumer Price Index and are credited against the royalties otherwise due. The license agreement was subject to four regulatory and commercialization milestones, of which one remains unachieved and unpaid. The remaining milestone is the FDA PMA submission of a licensed product, upon the achievement of which we will pay CWRU a milestone payment of $200,000. The license agreement terminates upon the expiration of the last-to-expire licensed patent, or on May 12, 2038, in countries where no such patents exist, or upon expiration of any exclusive marketing rights for a licensed product that have been granted by FDA or other U.S. government agency, whichever comes later. The EsoCheck patents, which are currently the last to expire, begin to expire in May 2035.

Regulatory

In June 2019, we received FDA 510(k) clearance to market EsoCheck in the U.S. as a device indicated for use in the collection and retrieval of surface cells of the esophagus in adults followed by FDA 510(k) clearance in 2022, expanding the use of EsoCheck in adults and pediatric populations in the U.S. In December 2019, our CLIA-certified then-laboratory partner, completed documentation of EsoGuard analytical validity allowing us to commercialize it as a Laboratory Developed Test (LDT).

In February 2020, we received FDA "Breakthrough Device Designation" for EsoGuard as an in-vitro diagnostic ("IVD") medical device. The FDA Breakthrough Device Program was created to offer patients more timely access to breakthrough technologies which provide for more effective treatment or diagnosis of life-threatening or irreversibly debilitating human disease or conditions by expediting their development, assessment and review through enhanced communications and more efficient and flexible clinical study design, including more favorable pre/post market data collection balance. The Centers for Medicare and Medicaid Services and the United States Congress continue to work to provide an expedited coverage pathway for emerging technologies.

In May 2021, we received CE Mark certification for EsoCheck (under the Medical Devices Directive 93/42/EEC), and in June 2021, we completed CE Mark self-certification for EsoGuard (under the European In-Vitro Diagnostic Devices Directive (IVDD 98/79/EC)), indicating both may be marketed in CE Mark European countries.

Our longer-term strategy is to secure a specific indication, based on published guidelines, for BE screening in certain at-risk populations using EsoGuard on samples collected with EsoCheck. This use of EsoGuard together with EsoCheck as a screening system must be cleared or approved by the FDA as an IVD device.

Laboratory Operations

On February 25, 2022, our new, wholly owned subsidiary, LucidDx Labs Inc. ("LucidDx Labs"), acquired from RDx, certain licenses and other related assets necessary for LucidDx Labs to operate its own new CLIA-certified, CAP-accredited clinical laboratory located in Lake Forest, CA. Since March 2022, we have conducted EsoGuard testing at our own laboratory with, until recently, the assistance of RDx, which had continued to provide certain testing and related services for the laboratory in accordance with the terms of a management services agreement ("MSA-RDx"), dated and effective February 25, 2022. Recently, however, the Company accelerated the development of internal resources necessary to operate the laboratory entirely on its own. Accordingly, Lucid's subsidiary LucidDx Labs and RDx agreed terminate the MSA-RDx effective as of February 10, 2023, such that LucidDx Labs now operates the laboratory itself, which the Company believes will improve the efficiency of the performance of the EsoGuard assay.

Competition

The U.S. market for esophageal cancer (i.e., EAC) and pre-cancer (i.e., BE, with or without dysplasia) screening is large, consisting of more than 30 million at-risk individuals over the age of 50. Given the large market for pre-cancer screening, we likely will face numerous competitors, some of which possess significantly greater financial and other resources and development capabilities than us. Our EsoGuard test faces competition from procedure-based detection technologies such as upper endoscopy, and other screening technologies such as multi-cancer early detection products. Our EsoCheck device faces competition from other manufactures with devices designed to collect cell samples from targeted regions of the esophagus. For example, Cytosponge is a small mesh sponge within a soluble gelatin capsule that dissolves in the stomach and then is pulled thru the targeted region brushing the lining of the esophagus and then later retrieved, although, unlike EsoCheck, it is unprotected from contamination. Our competitors may also be developing additional methods of detecting esophageal cancer and pre-cancer that have not yet been announced.

Accordingly, the market for our products is highly competitive and is characterized by extensive research and clinical efforts and rapid technological change. In order to compete effectively, EsoGuard and EsoCheck will have to achieve market acceptance, receive adequate insurance coverage and reimbursement, be cost effective and be simultaneously safe and effective. We believe that the principal competitive factors in our markets are:

- diagnostic accuracy and the quality of outcomes for medical conditions;
- acceptance by physicians and the medical device market generally;
- ease of use and reliability;
- technical leadership and superiority;
- effective marketing and distribution;
- speed to market; and
- product price and qualification for coverage and reimbursement.

Most of our existing and potential competitors have substantially greater financial, marketing, sales, distribution, manufacturing and technological resources. We may be unable to compete effectively against our competitors either because their products and services are superior or more cost efficient, or because of they have access to greater resources than us. These competitors may have greater name recognition than we do. Many of these competitors have obtained all desirable FDA or other regulatory approvals, and superior patent protection, for their products. Certain of our competitors have already commercialized their products, and others may commercialize their products in advance of our products. In addition, our competitors may make technical advances that render our products obsolete. We may be unable to respond to such technical advances.

Veris Cancer Care Platform

Overview

In May 2021, we formed Veris Health, a majority-owned subsidiary, focused on digital health technology. In connection with its formation, Veris Health acquired Oncodisc, a digital health company with groundbreaking tools to improve personalized cancer care through remote patient monitoring. Oncodisc's core technologies include the first intelligent implantable vascular access port with biologic sensors and wireless communication, combined with an oncologist-designed remote digital healthcare platform that provides patients and physicians with new tools to improve outcomes and optimize the delivery of cost-effective care through remote monitoring and data analytics.

Oncodisc was founded in 2018 experienced physician entrepreneurs, James Mitchell, M.D., who joined Veris Health as its full-time Chief Medical Officer, and Andrew Thoreson, M.D., who serves as a Veris Health consultant. They previously co-founded Redsmith, Inc., an interventional catheter company whose technology was acquired by C.R. Bard Inc., now BD Inc. (NYSE: BDX). Oncodisc received a National Science Foundation ("NSF") Small Business Innovation Research ("SBIR") grant award to support its early work and completed both the MedTech Innovator Accelerator and UCSF Rosenman Institute Accelerator programs.

The Veris Cancer Care Platform ("CCP") is a digital cancer care platform with physiologic data collection, symptom reporting and telehealth functions, designed to improve personalized cancer care through remote patient monitoring. Cancer patients enrolled in the Veris CCP receive a VerisBox™ with Veris-branded Bluetooth enabled connected health care devices. The devices transmit clinical data to cancer care teams to detect early signs of common cancer-related complications, provide longitudinal trends of physiologic and clinical data, and offer data-driven risk management tools for precision oncology. Veris CCP integrates directly with practices' and systems' Electronic Health Record ("EHR") systems, allowing care teams to easily view and interact with this data. We are also currently developing a groundbreaking implantable physiologic monitor containing biologic sensors capable of generating continuous data on key physiologic parameters known to predict adverse outcomes in cancer patients undergoing treatment. The implantable will seamlessly interact with the Veris CCP. These technologies are the subject of multiple patent applications and one issued patent.

Veris Health leverages a business-to-business sales model. Its software-as-a-service recurring-revenue business model seeks to generate 100% recurring revenue through oncology practice and hospital-based subscriptions. These entities pay monthly fees for each patient on the platform, through which they are able to drive revenues from remote physiologic monitoring (and, in the future, device implantation) under existing CPT codes, as well as through the upcoming CMS Enhancing Oncology Model (EOM) bonuses and incentives. Veris also plans to build a commercialization model around the oncology data it is collecting. We have identified multiple potential use cases across a number of verticals, including clinical trials, commercial use cases, and as a means to improve patient care.

In addition to targeting the oncology market, Veris plans to expand into the hospital-at-home market, cardiovascular diseases, end-stage renal disease, and lung disorders like COPD. We have already initiated R&D efforts around an enhanced implantable cardiac monitor capable of detecting cardiac arrhythmias and other physiologic parameters critical for high-risk cardiac patients. Future devices will combine novel sensing technology with seamless communication, engaging user interface design, and data analytics driving actionable clinical insights for patients with congestive heart failure. These technologies will then be expanded for high-risk kidney disease and pulmonary patients.

Market Opportunity

In 2022, approximately 1.9 million people in the U.S. were newly diagnosed with cancer, and cancer incidence in the U.S. is expected to continue to increase. Cancer patients face high rates of complications during the courses of their treatment which drive poor patient outcomes and healthcare costs. One driver of these issues is avoidable hospitalizations. We believe Veris Health's offerings can help drive costs down and improve outcomes through providing care teams with better, more continuous data.

Based on the aforementioned cancer prevalence in the U.S. and our current business model, we believe Veris Health's total addressable U.S. market opportunity exceeds $2 billion. In the future, we believe this opportunity will only expand through the implantable physiologic monitor, data commercialization, and the expansion into other markets aside from oncology.

Commercialization/Sales

Our Veris commercialization efforts have targeted the full spectrum of oncology care providers, with a focus on independent oncology practices, participants in CMS's Oncology Care Model (OCM) and EOM, and innovative, progressive health systems. The growing adoption of value-based models has provided a strong tailwind, as the Veris CCP addresses many requirements of these programs, including electronic Patient Reported Outcomes ("ePROs") and the use of data for quality improvement.

Manufacturing

The components comprising the Veris Cancer Care Platform are currently supplied to us by our partners TransTek and their U.S.-based subsidiary, Mio Labs. Each has passed a SOC-2 audit by an outside auditor. The final packaging of the overall box and order fulfillment is managed by Impilo, a partner with TransTek and Mio Labs. The customer support is currently managed internally, while partnering with Zendesk for customer service management.

Regulatory

The Veris CCP software is considered a non-device Medical Device Data System ("MDDS") that is excluded from the statutory definition of a medical device under the FDC Act and as confirmed in the FDA's MDDS Guidance: Medical Device Data Systems, Medical Image Storage Devices, and Medical Image Communications Devices. Therefore, Veris CCP is not subject to the FDA's regulatory requirements for devices.

Veris Health is also developing an implantable cardiac monitor and is currently interacting with the FDA via pre-submission process, seeking agreement on regulatory strategy and required testing to seek clearance of the monitor. We current plan to make our 510(k) submission for the implantable monitor in late 2023.

As Veris Health is currently sourcing the devices included in the VerisBox™ from the third-party 510(k) holders for those products, such holders are responsible for any losses, damages, claims or other liabilities that may arise with respect to those devices used with the Veris CCP software, notwithstanding Veris Health commercial branding being added to the devices or the devices' packaging.

Competition

The U.S. market for cancer patient care is large. There are many existing competitors in the remote patient monitoring space, some of which possess significantly greater financial and other resources and development capabilities than us. Our Veris CCP faces competition from other digital care platforms providing many of the same features, including EHR integration and remote patient monitoring capabilities. While we are not aware of other implantable physiologic monitors containing biologic sensors, our competitors may also be developing similar devices that have not yet been announced.

Product Pipeline

Below is a summary of certain of the other leading products within our development pipeline. While we currently are devoting substantially all of our resources to the acceleration of EsoGuard and Veris Cancer Care Platform commercialization, as resources permit, we will continue to explore innovative technologies, such as our EsoCure, CarpX and NextFlo products as more fully described below, that fulfill our project selection criteria without limiting ourselves to any target specialty or condition.

Esocure

In connection with our efforts to expand our presence in the EAC diagnostic market, we are also developing the EsoCure Esophageal Ablation Device, with the intent to allow a clinician to treat dysplastic BE before it can progress to EAC, a highly lethal esophageal cancer, and to do so without the need for complex and expensive capital equipment. We have successfully completed a pre-clinical feasibility animal study of EsoCure demonstrating excellent, controlled circumferential ablation of the esophageal mucosal lining. An acute and survival animal study of EsoCure Esophageal Ablation Device has also been completed, demonstrating successful direct thermal balloon catheter ablation of esophageal lining through the working channel of a standard endoscope. When resources permit, we plan to conduct additional development work and animal testing of EsoCure to support a future FDA 510(k) submission.

CarpX

CarpX is a patented, single-use, disposable, minimally invasive surgical device for use in the treatment of carpal tunnel syndrome. We believe CarpX is designed to allow the physician to relieve the compression on the median nerve without an open incision or the need for endoscopic or other imaging equipment, and therefore will be significantly less invasive than existing treatments. To use CarpX, the operator first advances a guidewire through the carpal tunnel under the ligament, and then advanced over the wire and positioned in the carpal tunnel under ultrasonic and/or fluoroscopic guidance. When the CarpX balloon is inflated it creates tension in the ligament positioning the cutting electrodes underneath it and creates space within the tunnel, providing anatomic separation between the target ligament and critical structures such as the median nerve. Radiofrequency energy is briefly delivered to the electrodes, rapidly cutting the ligament, and relieving the pressure on the nerve. We believe CarpX will be significantly less invasive than existing treatments.

CarpX received FDA 510(k) marketing clearance in April 2020, with the first commercial procedure successfully performed in December 2020. In May 2021 European CE Mark Certification was received for CarpX. Our limited-release commercialization efforts through 2022 were focused on engaging key opinion hand surgeons designed to solicit input for ergonomic improvements to the device, procedure development and surgical-time optimization, and ease of use. As a result of this clinical input, we have initiated a product development project to incorporate intraluminal ultrasound into the device to include real time imaging of the ligament to be cut together with critical anatomic structures, and will continue to pursue that project, as resources permit.

PortIO

Our PortIO implantable intraosseous vascular access device is being developed as a means for infusing fluids, medications and other substances directly into the bone marrow cavity and from there into the central venous circulation. The intraosseous route provides a means for infusing fluids, medications and other substances directly into the bone marrow cavity which communicates with the central venous circulation via nutrient and emissary veins. This route is well established, having been used for decades in a variety of settings including trauma, especially military trauma, and pediatric emergencies. It has been shown to be bioequivalent to the intravenous route. Complication rates are low and there are few contraindications. Currently available intraosseous devices pass through the skin into the bone and are therefore limited to short term use. PortIO is a novel, implantable intraosseous vascular access device which does not require accessing the central venous system and does not have an indwelling intravascular component. It is designed to be highly resistant to occlusion and, we believe, may not require regular flushing. It features simplified, near-percutaneous insertion and removal, without the need for surgical dissection or radiographic confirmation.

Recent Developments

Business

Status of Lucid Clinical Trials

Lucid is currently seeking to accelerate our collection of clinical utility data through a range of trials that can be efficiently executed. These efforts include a planned investigator-initiated, retrospective analysis of prospectively collected data on the approximately 400 San Antonio fire fighters who underwent testing as part of a community-sponsored cancer awareness event (in respect of which we expect to publish results in the first half of 2023); an ongoing investigator-initiated, retrospective, single-center, study with 500 patients (in respect of which we expect to publish results mid-2023), a virtual-patient randomized controlled trial with intended recruitment of 100-200 physician participants (in respect of which we expect to publish results this year); a Lucid-sponsored multi-center, prospective, observational study with 500 patients; and a Lucid-sponsored registry at existing Lucid Test Centers, whereby all patients undergoing EsoCheck testing will be given the opportunity to provide informed consent and contribute data about their risk factors, EsoGuard results, and subsequent diagnostic and/or therapeutic journey. Both Lucid-sponsored observational/registry studies expect to have preliminary results and/or interim analysis before the end of 2023.

As previously disclosed, consequently, Lucid has decided to delay for the time being the two previously commenced clinical trials, the "EsoGuard screening study" ("BE-1") and the "EsoGuard case-control study" ("BE-2"), as Lucid is devoting our clinical resources to the studies cited above, which we expect will more efficiently generate the clinical data Lucid is currently prioritizing to drive EsoGuard commercialization.

LucidDx Labs Laboratory Operations Update

On February 14, 2023, Lucid Diagnostics and LucidDx Labs Inc. entered into an agreement (the "MSA Termination Agreement") with RDx, pursuant to which the parties mutually agreed to terminate the MSA-RDx without cause. The termination was effective as February 10, 2023. Until the termination of the MSA-RDx, RDx had continued to provide certain testing and related services for the Laboratory in accordance with the terms of the MSA-RDx. Recently, however, Lucid accelerated the development of internal resources necessary to operate the Laboratory entirely on its own. Accordingly, the Company believes that termination of the MSA-RDx will improve the efficiency of the performance of the EsoGuard assay.

Among other things, the MSA Termination Agreement reduces the remaining amounts of the earnout payments and management fees due under the APA-RDx and the MSA-RDx to $725,000 (from the $3,450,000 that would otherwise have been payable under the APA and MSA if the MSA had remained in effect through the balance of its stated term), resulting in a net savings to Lucid Diagnostics of $2,725,000. The payment was satisfied through the issuance of 553,436 shares of Lucid Diagnostics' common stock on February 25, 2023. Lucid Diagnostics was not required to make any cash payments in connection with the termination.

#CheckYourFoodTube Events

In January 2023, Lucid successfully completed its first #CheckYourFoodTube Precancer Testing Event, in partnership with Rachelle Hamblin, M.D., M.P.H., and the San Antonio Fire Department (SAFD), to detect esophageal precancer in at-risk members of the department. The SAFD testing event was held over two weekends in January, which has been designated as Firefighter Cancer Awareness Month by the International Association of Fire Fighters (IAFF). A total of 391 members, nearly one-quarter of the department, who were deemed by Dr. Hamblin to be at-risk for esophageal precancer, underwent a brief, on-site, noninvasive cell collection procedure, performed by Lucid clinical personnel using its EsoCheck® Esophageal Cell Collection Device. Firefighters with suspected esophageal precancer based on a positive EsoGuard result were identified, including some less than forty years of age, and will undergo appropriate monitoring and treatment, as indicated by clinical practice guidelines, to prevent progression to esophageal cancer. These events, which Lucid looks to expand across the country, are an extension of Lucid's recently introduced and expanding satellite Lucid Test Center (sLTC) program, which brings our precancer testing directly to patients—at their physician's office and now at large testing day events. Lucid demonstrated that its nurse practitioners can each perform up to fifty EsoCheck procedures in a day, and its laboratory team handled over two hundred incoming samples in a day, while maintaining turnaround times at target. These successes provide an excellent foundation for future testing events as we continue to drive EsoGuard commercialization using all the tools at our disposal.

Veris Health Commercialization Update

In December 2022, Veris Health signed a license agreement for the Veris CCP software with its first customer, New Jersey Cancer Care. Since, Veris Health onboarded the first cohort of patients of that practice onto the Veris CCP as well, and has signed license agreements with two additional cancer centers. These successes lay the groundwork for Veris Health's expansion plans with respect to the Veris CCP software as it seeks to onboard cancer centers and patients across the country.

NASDAQ Notice

On December 29, 2022, the Company received a notice from the Listing Qualifications Department of Nasdaq stating that, for the prior 30 consecutive business days (through December 28, 2022), the closing bid price of the Company's common stock had been below the minimum of $1 per share required for continued listing on the Nasdaq Capital Market under Nasdaq Listing Rule 5550(a)(2). The notification letter stated that the Company would be afforded 180 calendar days (until June 27, 2023) to regain compliance. In order to regain compliance, the closing bid price of the Company's common stock must be at least $1 for a minimum of ten consecutive business days. In February 2023, the Company distributed a proxy statement for a special meeting of shareholders to be held on March 31, 2023 (the "Special Meeting"), at which the Company will be seeking approval of an amendment to the Company's Certificate of Incorporation, to effect, at any time prior to the one-year anniversary date of the Special Meeting, (i) a reverse split of the Company's outstanding shares of common stock at a specific ratio, ranging from 1-for-5 to 1-for-15, to be determined by the board of directors of the Company in its sole discretion, and (ii) an associated reduction in the number of shares of common stock the Company is authorized to issue, from 250,000,000 shares to 50,000,000 shares. If the proposed reverse stock split is approved, the Company anticipates it will regain compliance with the Nasdaq requirements for continued listing.

Payroll and Benefit Expense Reimbursement Agreement

On November 30, 2022, PAVmed and Lucid entered into a payroll and benefit expense reimbursement agreement (the "PBERA"). Historically, PAVmed has paid for certain payroll and benefit-related expenses in respect of Lucid''s personnel on behalf of Lucid, and Lucid has reimbursed PAVmed for the same. Pursuant to the PBERA, PAVmed will continue to pay such expenses, and Lucid will continue to reimburse PAVmed for the same. The PBERA now provides that the expenses will be reimbursed on a quarterly basis or at such other frequency as the parties may determine, in cash or, subject to approval by the board of directors of each of PAVmed and Lucid, in shares of Lucid's common stock, with such shares valued at the volume weighted average price of such stock during the final ten trading days preceding the later of the two dates on which such stock issuance is approved by the board of directors of each of PAVmed and Lucid (subject to a floor price of $0.40 per share), or in a combination of cash and shares. However, in no event shall Lucid issue any shares of its common stock to PAVmed in satisfaction of all or any portion of the expenses if the issuance of such shares of its common stock would exceed the maximum number of shares of common stock that the Issuer may issue under the rules or regulations of The Nasdaq Stock Market LLC ("Nasdaq"), unless Lucid obtains the approval of its stockholders as required by the applicable rules of the Nasdaq for issuances of shares of its common stock in excess of such amount.

Financing

Securities Purchase Agreement - March 31, 2022 - Senior Secured Convertible Note - April 4, 2022 and Senior Secured Convertible Note - September 8, 2022

Effective as of March 31, 2022, we entered into a Securities Purchase Agreement ("SPA") with an accredited institutional investor ("Investor", "Lender", and /or "Holder"), pursuant to which we agreed to sell, and the Investor agreed to purchase an aggregate of $50.0 million face value principal of Senior Secured Convertible Notes. The SPA provided for the sale to the Investor of an initial Senior Secured Convertible Note with a face value principal of $27.5 million, which closed on April 4, 2022 (the "April 2022 Senior Convertible Note"). The SPA also provided for sales of additional Senior Secured Convertible Notes in one or more additional closings (upon the satisfaction of certain conditions), with an aggregate face value principal of up to an additional $22.5 million. The April 2022 Senior Convertible Note proceeds were $24.4 million after deducting a $2.5 million lender fee and the Company's offering costs of approximately $0.6 million, inclusive primarily of $0.5 million placement agent fees.

On September 8, 2022, we completed an additional closing under the SPA, in which we sold to the Investor an additional Senior Secured Convertible Note with a face value principal of $11.25 million (the "September 2022 Senior Convertible Note"). The September 2022 Senior Convertible Note proceeds were $10.0 million after deducting a $1.0 million lender fee and the Company's offering costs of approximately $0.2 million, inclusive primarily of placement agent fees.

See our accompanying consolidated financial statements Note 14, *Debt*, for further discussion of the SPA dated March 31, 2022 and the senior convertible notes.

Lucid Diagnostics Inc. - Committed Equity Facility and ATM Facility

In March 2022, our majority-owned subsidiary, Lucid Diagnostics, entered into a committed equity facility with an affiliate of Cantor Fitzgerald ("Cantor"). Under the terms of the facility, Cantor committed to purchase up to $50 million of Lucid Diagnostics common stock from time to time upon the request of Lucid Diagnostics. While there are distinct differences, the facility is structured similarly to a traditional at-the-market equity facility, insofar as it allows Lucid Diagnostics to raise primary capital on a periodic basis at prices based on the existing market price. Through December 31, 2022, 680,263 shares of common stock of Lucid Diagnostics were issued under this facility for total proceeds of approximately $1.8 million.

In November 2022, Lucid Diagnostics also entered into an "at-the-market offering" for up to $6.5 million of its common stock that may be offered and sold under a Controlled Equity Offering Agreement between Lucid Diagnostics and Cantor Fitzgerald & Co. In the year ended December 31, 2022, there were no Lucid Diagnostics shares sold through their at-the-market equity facility. Subsequent to December 31, 2022, through March 9, 2023, Lucid Diagnostics sold 230,068 shares through its at-the-market equity facility for approximately $0.3 million.

Lucid Diagnostics - Series A Preferred Stock Offering

On March 7, 2023, Lucid entered into subscription agreements for the sale of 13,625 shares (the "*Lucid Series A Preferred Stock*"). Each share of the Lucid Series A Preferred Stock has a stated value of $1,000 and a conversion price of $1.394. The terms of the Lucid Series A Preferred Stock also include a one times preference on liquidation and a right to receive dividends equal to 20% of the number of shares of Lucid common stock into which such Lucid Series A Preferred Stock is convertible, payable on the one-year and two-year anniversary of the issuance date. The Lucid Series A Preferred Stock is a non-voting security, other than with respect to limited matters related to changes in terms of the Lucid Series A Preferred Stock. The aggregate gross proceeds from the sale of shares in such offering were $13.625 million.

Lucid Diagnostics - Private Placement - Securities Purchase Agreement

Effective as of March 13, 2023, Lucid entered into a Securities Purchase Agreement ("Lucid SPA") with an accredited institutional investor ("Lucid Investor", "Lucid Lender", and /or "Lucid Holder"), pursuant to which Lucid agreed to sell, and the Lucid Investor agreed to purchase a Senior Secured Convertible Note with a face value principal of up to $11.1 million (the "March 2023 Lucid Senior Convertible Note"). The issuance of the March 2023 Lucid Senior Convertible Note is subject to customary closing conditions.

The March 2023 Lucid Senior Secured Convertible Note would have a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of Lucid's common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of the two-year anniversary of the date of issuance. The March 2023 Lucid Senior Convertible Note would be convertible into or otherwise paid in shares of Lucid's common stock.

Under the March 2023 Lucid Senior Convertible Note, Lucid is and would be subject to certain customary affirmative and negative covenants regarding the incurrence of indebtedness, the existence of liens, the repayment of indebtedness and the making of investments, the payment of cash in respect of dividends, distributions or redemptions, the transfer of assets, the maturity of other indebtedness, and transactions with affiliates, among other customary matters. Under the March 2023 Lucid Senior Convertible Note, Lucid would also be subject to financial covenants requiring that (i) the amount of Lucid's available cash equal or exceed $5.0 million at all times, (ii) the ratio of (a) the outstanding principal amount of the notes issued under the Lucid SPA, accrued and unpaid interest thereon and accrued and unpaid late charges to (b) Lucid's average market capitalization over the prior ten trading days, not exceed 30%, and (iii) that Lucid's market capitalization shall at no time be less than an amount to be agreed upon.

Intellectual Property

Our business depends on our ability to create or acquire proprietary medical device and diagnostics technologies to commercialize. We own or have the right to use intellectual property rights, such as patents, trademarks, copyrights, trade secrets and know-how, pertaining to our EsoCheck and EsoGuard technology, our Veris technology and our EsoCure, CarpX and PortIO products, among other technologies and products.

We intend to vigorously protect our proprietary technologies' intellectual property rights in patents, trademarks and copyrights, as available through registration in the United States and internationally. We currently have applied for, license or own 55 domestic and foreign patents across 11 families of products, including patents protecting our EsoCheck, EsoGuard and Veris technology. The date the patents protecting certain of our owned and licensed technology will first begin to expire is as set forth in the table below (although currently pending patent applications, both foreign and domestic, are positioned to provide protection beyond such date in each instance).

Technology	Year
EsoCheck	May 2034
EsoGuard	August 2024
Veris Health	November 2038
EsoCure	March 2036
CarpX	November 2037
PortIO	November 2035

Patent protection and other proprietary rights are thus essential to our business. Our policy is to aggressively file patent applications to protect our proprietary technologies including inventions and improvements to inventions. We seek patent protection, as appropriate, on:

- the product itself including all embodiments with future commercial potential;
- the methods of using the product; and
- the methods of manufacturing the product.

In addition to filing and prosecuting patent applications in the United States, we intend to file counterpart patent applications in other countries worldwide where there is a value in doing so. Foreign filings can be cumbersome and expensive, and we will pursue such filings when we believe they are warranted as we try to balance our international commercialization plans with our desire to protect the global value of the technology.

The term of individual patents depends upon the legal term of the patents in the countries in which they are obtained. In most countries in which we file, the patent term is 20 years from the earliest date of filing a non-provisional patent application. In the United States, a patent's term may be shortened if a patent is terminally disclaimed over another patent or as a result of delays in patent prosecution by the patentee, and a patent's term may be lengthened by patent term adjustment (PTA), which compensates a patentee for administrative delays by the U.S. Patent and Trademark Office in granting a patent, or patent term extension, which restores time lost due to regulatory delays.

We intend to continuously reassess and fine-tune our intellectual property strategy in order to fortify our position in the United States and internationally. Prior to acquiring or licensing a technology from a third party, we will evaluate the existing proprietary rights, our ability to adequately obtain and protect these rights and the likelihood or possibility of infringement upon competing rights of others.

We also rely upon trade secrets, know-how, continuing technological innovation, and upon licensing opportunities, to develop and maintain our competitive position. We intend to protect our proprietary rights through a variety of methods, including confidentiality agreements and/or proprietary information agreements with suppliers, employees, consultants, independent contractors and other entities who may have access to proprietary information. We will generally require employees to assign patents and other intellectual property to us as a condition of employment with us. All of our consulting agreements will pre-emptively assign to us all new and improved intellectual property that arise during the term of the agreement.

PAVmed also has (directly or through its subsidiaries) proprietary rights to a range of trademarks, including, among others, PAVmed™, Lucid Diagnostics™, LUCID™, VERIS™, Oncodisc™, CarpX®, EsoCheck®, EsoGuard®, EsoCheck Cell Collection Device®, Collect + Protect®, EsoCure Esophageal Ablation Device™, NextFlo™, and PortIO™. (Solely as a matter of convenience, trademarks and trade names referred to herein may or may not be accompanied with the requisite marks of "™" or "®". However, the absence of such marks is not intended to indicate, in any way, PAVmed Inc. or its subsidiaries will not assert, to the fullest extent possible under applicable law, their respective rights to such trademarks and trade names.)

Health Insurance Coverage and Reimbursement

Our ability to successfully commercialize our products will depend in part on the extent to which governmental authorities, private health insurers and other third-party payors provide coverage for and establish adequate reimbursement levels for the procedures during which our products are used.

In the United States, third-party payors continue to implement initiatives that restrict the use of certain technologies to those that meet certain clinical evidentiary requirements. In addition to uncertainties surrounding coverage policies, there are periodic changes to reimbursement. Third-party payors regularly update reimbursement amounts and also from time to time revise the methodologies used to determine reimbursement amounts. This includes annual updates to payments to physicians, hospitals and ambulatory surgery centers for procedures during which our products are used. An example of payment updates is the Medicare program's updates to hospital and physician payments, which are done on an annual basis using a prescribed statutory formula. In the past, when the application of the formula resulted in lower payment, Congress has passed interim legislation to prevent the reductions.

A product's reimbursement profile, both in the U.S. and internationally, is an important component of the product's commercial opportunity. We prefer projects with existing reimbursement codes, the opportunity to seek reimbursement under higher-value surgical procedure codes or the potential to seek reimbursement under narrow, product-specific codes as opposed to bundled procedure codes. For those products that have high strategic value, but with less defined reimbursement, we have engaged reimbursement experts and support from industry associations to accelerate the acquisition of satisfactory reimbursement levels.

See "*EsoGuard and EsoCheck—Reimbursement and Market Access*" above for a fuller discussion of the reimbursement status for EsoCheck and EsoGuard.

Competition for New Medical Device Innovation

Developing and commercializing new products is highly competitive. The market is characterized by extensive research and clinical efforts and rapid technological change. We face intense competition worldwide from medical device, biomedical technology and medical products and combination products companies, including major medical products companies. We may be unable to respond to technological advances through the development and introduction of new products. Most of our existing and potential competitors have substantially greater financial, marketing, sales, distribution, manufacturing and technological resources. These competitors may also be in the process of seeking FDA or other regulatory approvals, or patent protection, for new products. Our competitors may commercialize new products in advance of our products. Our products also face competition from numerous existing products and procedures, some of which currently are considered part of the standard of care. We believe the principal competitive factors in our markets are:

- the quality of outcomes for medical conditions;
- acceptance by surgeons and the medical device market generally;
- ease of use and reliability;
- technical leadership and superiority;
- effective marketing and distribution;
- speed to market; and
- product price and qualification for coverage and reimbursement.

We will also compete in the marketplace to recruit and retain qualified scientific, management and sales personnel, as well as in acquiring technologies and licenses complementary to our products or advantageous to our business. We are aware of several companies that compete or are developing technologies in our current and future products areas. In order to compete effectively, our products will have to achieve market acceptance, receive adequate insurance coverage and reimbursement, be cost effective and be simultaneously safe and effective.

See "*EsoGuard and EsoCheck—Competition*" and "*Veris Cancer Care Platform—Competition*" above for a fuller discussion of the competitive environment for our key products, EsoCheck, EsoGuard and the Veris Cancer Care Platform.

Government Regulation

Key U.S. Regulation

FDA Regulation

Generally, products we develop must be cleared by the FDA before they are marketed in the United States. Before and after approval or clearance in the United States, our products are subject to extensive regulation by the FDA under the FDCA and/or the Public Health Service Act, as well as by other regulatory bodies. FDA regulations govern, among other things, the development, testing, manufacturing, labeling, safety, storage, recordkeeping, market clearance or approval, advertising and promotion, import and export, marketing and sales, and distribution of medical devices and products.

In the United States, medical devices are subject to varying degrees of regulatory control and are classified in one of three classes depending on the extent of controls the FDA determines are necessary to reasonably ensure their safety and efficacy:

- Class I: general controls, such as labeling and adherence to quality system regulations;
- Class II: special controls, pre-market notification (often referred to as a 510(k) application), specific controls such as performance standards, patient registries, post-market surveillance, additional controls such as labeling and adherence to quality system regulations; and
- Class III: special controls and approval of a PMA application.

In general, the higher the classification, the greater the time and cost to obtain approval to market. There are no "standardized" requirements for approval, even within each class. For example, the FDA could grant 510(k) status, but require a human clinical trial, a typical requirement of a PMA. They could also initially assign a device Class III status but end up approving a device as a 510(k) device if certain requirements are met. The range of the number and expense of the various requirements is significant. The quickest and least expensive pathway would be 510(k) approval with just a review of existing data. The longest and most expensive path would be a PMA with extensive randomized human clinical trials. We cannot predict how the FDA will classify our products, nor predict what requirements will be placed upon us to obtain market approval, or even if they will approve our products at all.

To request marketing authorization by means of a 510(k) clearance, we must submit a pre-market notification demonstrating the proposed device is substantially equivalent to another currently legally marketed medical device, has the same intended use, and is as safe and effective as a currently legally marketed device and does not raise different questions of safety and effectiveness than does a currently legally marketed device. 510(k) submissions generally include, among other things, a description of the device and its manufacturing, device labeling, medical devices to which the device is substantially equivalent, safety and biocompatibility information, and the results of performance testing. In some cases, a 510(k) submission must include data from human clinical studies. Marketing may commence only when the FDA issues a clearance letter finding substantial equivalence. After a device receives 510(k) clearance, any product modification that could significantly affect the safety or effectiveness of the product, or would constitute a significant change in intended use, requires a new 510(k) clearance or, if the device would no longer be substantially equivalent, would require PMA, or possibly, a de novo pathway under section 513(f)2 of the FDCA. In addition, any additional claims the Company wished to make at a later date may require a PMA. If the FDA determines the product does not qualify for 510(k) clearance, they will issue a Not Substantially Equivalent letter, at which point the Company must submit and the FDA must approve a PMA or issue premarket clearance using the de novo before marketing can begin.

In 1997, the Food and Drug Administration Modernization Act (FDAMA) added the de novo classification pathway under section 513(f)(2) of the FD&C Act, establishing an alternate pathway to classify new devices into Class I or II that had automatically been placed in Class III after receiving a Not Substantially Equivalent (NSE) determination in response to a 510(k) submission. In this process, a sponsor who receives an NSE determination may, within 30 days of receiving notice of the NSE determination, request FDA to make a risk-based classification of the device under section 513(a)(1) of the Act.

In 2012, section 513(f)(2) of the FD&C Act was amended by section 607 of the Food and Drug Administration Safety and Innovation Act (FDASIA), to provide a second option for de novo classification. In this second pathway, a sponsor who determines there is no legally marketed device upon which to base a determination of substantial equivalence may request FDA to make a risk-based classification of the device under section 513(a)(1) of the Act without first submitting a 510(k).

During the review of a 510(k) submission, the FDA may request more information or additional studies and may decide the indications for which we seek approval or clearance should be limited. In addition, laws and regulations and the interpretation of those laws and regulations by the FDA may change in the future. We cannot foresee what effect, if any, such changes may have on us.

FDA Regulations will continue to change and evolve including the 2016-21st Century Cures Act which mandated the creation and revision of policies and processes intended to speed patient access to new medical devices and codifying into law the FDA's expedited review program for breakthrough devices for which EsoGuard was so designated. In 2017, the Food and Drug Administration Reauthorization Act (FDARA) which included improvements to premarket review times and investments in strategic initiatives like the National Evaluation System for health Technology (NEST) and patient input and decoupling accessory classification from classification of the parent device. We must continue to be aware of these changes that possibly impact our development and commercialization work. The Company has a network of professionals with extensive experience in these matters that advise us on both the pre-approval/clearance requirements as well as the post market surveillance compliance obligations.

Clinical Trials of Medical Technology

One or more clinical trials may be necessary to support an FDA submission. Clinical studies of unapproved or uncleared medical devices or devices being studied for uses for which they are not approved or cleared (investigational devices) must be conducted in compliance with FDA requirements. If an investigational device could pose a significant risk to patients, the sponsor company must submit an Investigational Device Exemption, or IDE application to the FDA prior to initiation of the clinical study. An IDE application must be supported by appropriate data, such as animal and laboratory test results, showing it is safe to test the device on humans and the testing protocol is scientifically sound. The IDE will automatically become effective 30 days after receipt by the FDA unless the FDA notifies the company the investigation may not begin. Clinical studies of investigational devices may not begin until an institutional review board ("IRB") has approved the study.

During any study, the sponsor must comply with the FDA's IDE requirements. These requirements include investigator selection, trial monitoring, adverse event reporting, and record keeping. The investigators must obtain patient informed consent, rigorously follow the investigational plan and study protocol, control the disposition of investigational devices, and comply with reporting and record keeping requirements. We, the FDA, or the IRB at each institution at which a clinical trial is being conducted may suspend a clinical trial at any time for various reasons, including a belief the subjects are being exposed to an unacceptable risk. During the approval or clearance process, the FDA typically inspects the records relating to the conduct of one or more investigational sites participating in the study supporting the application.

Post-Approval Regulation of Medical Devices

After a device is cleared or approved for marketing, numerous and pervasive regulatory requirements continue to apply. These include:

- the FDA Quality Systems Regulation (QSR), which governs, among other things, how manufacturers design, test manufacture, exercise quality control over, and document manufacturing of their products;
- labeling and claims regulations, which prohibit the promotion of products for unapproved or "off-label" uses and impose other restrictions on labeling; and,
- the Medical Device Reporting regulation, which requires reporting to the FDA of certain adverse experience associated with use of the product.

We will continue to be subject to inspection by the FDA to determine our compliance with regulatory requirements.

Manufacturing cGMP Requirements

Manufacturers of medical devices are required to comply with FDA manufacturing requirements contained in the FDA's current Good Manufacturing Practices (cGMP) set forth in the quality system regulations promulgated under section 520 of the FDCA. cGMP regulations require, among other things, quality control and quality assurance as well as the corresponding maintenance of records and documentation. Failure to comply with statutory and regulatory requirements subjects a manufacturer to possible legal or regulatory action, including the seizure or recall of products, injunctions, consent decrees placing significant restrictions on or suspending manufacturing operations, and civil and criminal penalties. Adverse experiences with the product must be reported to the FDA and could result in the imposition of marketing restrictions through labeling changes or in product withdrawal. Product approvals may be withdrawn if compliance with regulatory requirements is not maintained or if problems concerning safety or efficacy of the product occur following the approval. We expect to use contract manufacturers to manufacture our products for the foreseeable future we will therefore be dependent on their compliance with these requirements to market our products. We work closely with our contract manufacturers to assure our products are in strict compliance with these regulations.

Laboratory Certification, Accreditation and Licensing

Lucid's CLIA-certified laboratory is subject to U.S. and state laws and regulations regarding the operation of clinical laboratories. CLIA requirements and laws of certain states, including those of California, New York, Maryland, Pennsylvania, Rhode Island and Florida, impose certification requirements for clinical laboratories, and establish standards for quality assurance and quality control, among other things. CLIA provides that a state may adopt different or more stringent regulations than federal law and permits states to apply for exemption from CLIA if the state's laboratory laws are equivalent to, or more stringent than, CLIA. For example, the State of New York's clinical laboratory regulations, which have received an exemption from CLIA, contain provisions that are in certain respects more stringent than federal law. Therefore, as long as New York maintains a licensure program that is CLIA-exempt, Lucid will need to comply with New York's clinical laboratory regulations in order to offer Lucid clinical laboratory products and services in New York.

Lucid has current certificates to perform clinical laboratory testing. Clinical laboratories are subject to inspection by regulators and to sanctions for failing to comply with applicable requirements. Sanctions available under CLIA and certain state laws include prohibiting a laboratory from running tests, requiring a laboratory to implement a corrective plan, and imposing civil monetary penalties. If Lucid's CLIA-certified laboratory fails to meet any applicable requirements of CLIA or state law, that failure could adversely affect any future CMS consideration of its technologies, prevent their approval entirely, and/or interrupt the commercial sale of any products and services and otherwise cause Lucid to incur significant expense.

Other U.S. Regulation

In addition to FDA restrictions on marketing and promotion of drugs and devices, other federal and state laws restrict our business practices. These laws include, without limitation, anti-kickback and false claims laws, data privacy and security laws, as well as transparency laws regarding payments or other items of value provided to healthcare providers.

Because of the breadth of these laws and the narrowness of the statutory exceptions and safe harbors available under such laws, it is possible that some of our business activities, including certain sales and marketing practices and the provision of certain items and services to our customers, could be subject to challenge under one or more of such laws. If our operations are found to be in violation of any of the health regulatory laws described above or any other laws that apply to us, we may be subject to penalties, including potentially significant criminal and civil and administrative penalties, damages, fines, disgorgement, imprisonment, exclusion from participation in government healthcare programs, contractual damages, reputational harm, administrative burdens, diminished profits and future earnings, and the curtailment or restructuring of our operations, any of which could adversely affect our ability to operate our business and our results of operations. To the extent any of our products are sold in a foreign country, we may be subject to similar foreign laws, which may include, for instance, applicable post-marketing requirements, including safety surveillance, anti-fraud and abuse laws and implementation of corporate compliance programs and reporting of payments or transfers of value to healthcare professionals.

Physician Payment Sunshine Act

There has been a recent trend of increased federal and state regulation of payments and transfers of value provided to healthcare professionals or entities. On February 8, 2013, the Centers for Medicare & Medicaid Services, or CMS, released its final rule implementing section 6002 of the Affordable Care Act known as the Physician Payment Sunshine Act that imposes new annual reporting requirements on device manufacturers for payments and other transfers of value provided by them, directly or indirectly, to physicians and teaching hospitals, as well as ownership and investment interests held by physicians and their family members. A manufacturer's failure to submit timely, accurately and completely the required information for all payments, transfers of value or ownership or investment interests may result in civil monetary penalties of up to an aggregate of $150,000 per year, and up to an aggregate of $1 million per year for "knowing failures." Manufacturers that produces at least one product reimbursed by Medicare, Medicaid, or Children's Health Insurance Program and (i) if the product is a drug or biological, and it requires a prescription (or physician's authorization) to administer; or (ii) if the product is a device or medical supply, and it requires premarket approval or premarket notification by the FDA are required to comply with the Open Payments (commonly referred to as the Sunshine Act) filing requirements under CMS. We currently do not have any products covered by Medicare, Medicaid, or Children's Health Insurance Program as none of our products have premarket approval or clearance notification. We expect once our products receive regulatory clearance, we will be required to comply with the Sunshine Act provisions.

Certain states, such as California and Connecticut, also mandate implementation of commercial compliance programs, and other states, such as Massachusetts and Vermont, impose restrictions on device manufacturer marketing practices and require tracking and reporting of gifts, compensation and other remuneration to healthcare professionals and entities. The shifting commercial compliance environment and the need to build and maintain robust and expandable systems to comply with different compliance or reporting requirements in multiple jurisdictions increase the possibility a healthcare company may fail to comply fully with one or more of these requirements.

Federal Anti-Kickback Statute

The Federal Anti-Kickback Statute prohibits, among other things, knowingly and willfully offering, paying, soliciting or receiving any remuneration (including any kickback, bribe or rebate), directly or indirectly, overtly or covertly, to induce or in return for purchasing, leasing, ordering or arranging for or recommending the purchase, lease or order of any good, facility, item or service reimbursable, in whole or in part, under Medicare, Medicaid or other federal healthcare programs. The term "remuneration" has been broadly interpreted to include anything of value. Although there are a number of statutory exceptions and regulatory safe harbors protecting some common activities from prosecution, the exceptions and safe harbors are drawn narrowly. Practices that involve remuneration that may be alleged to be intended to induce prescribing, purchases or recommendations may be subject to scrutiny if they do not qualify for an exception or safe harbor. Failure to meet all of the requirements of a particular applicable statutory exception or regulatory safe harbor does not make the conduct per se illegal under the Anti-Kickback Statute. Instead, the legality of the arrangement will be evaluated on a case-by-case basis based on a cumulative review of all its facts and circumstances. Several courts have interpreted the statute's intent requirement to mean if any one purpose of an arrangement involving remuneration is to induce referrals of federal healthcare covered business, the Anti-Kickback Statute has been violated.

Additionally, the intent standard under the Anti-Kickback Statute was amended by the Patient Protection and Affordable Care Act of 2010, as amended by the Health Care and Education Reconciliation Act of 2010, collectively the Affordable Care Act, to a stricter standard such that a person or entity no longer needs to have actual knowledge of the statute or specific intent to violate it in order to have committed a violation. In addition, the Affordable Care Act codified case law that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal civil False Claims Act.

Federal False Claims Act

The False Claims Act prohibits, among other things, any person or entity from knowingly presenting, or causing to be presented, a false or fraudulent claim for payment or approval to the federal government or knowingly making, using or causing to be made or used a false record or statement material to a false or fraudulent claim to the federal government. A claim includes "any request or demand" for money or property presented to the U.S. government. The False Claims Act also applies to false submissions that cause the government to be paid less than the amount to which it is entitled, such as a rebate. Intent to deceive is not required to establish liability under the False Claims Act. Several pharmaceutical, device and other healthcare companies have been prosecuted under these laws for, among other things, allegedly providing free product to customers with the expectation the customers would bill federal programs for the product. Other companies have been prosecuted for causing false claims to be submitted because of the companies' marketing of products for unapproved, and thus non-covered uses.

The government may further prosecute, as a crime, conduct constituting a false claim under the False Claims Act. The False Claims Act prohibits the making or presenting of a claim to the government knowing such claim to be false, fictitious, or fraudulent and, unlike civil claims under the False Claims Act, requires proof of intent to submit a false claim.

The Foreign Corrupt Practices Act

The Foreign Corrupt Practices Act, or the FCPA, prohibits any U.S. individual or business from paying, offering, or authorizing payment or offering of anything of value, directly or indirectly, to any foreign official, political party or candidate for the purpose of influencing any act or decision of the foreign entity in order to assist the individual or business in obtaining or retaining business. The FCPA also obligates companies whose securities are listed in the United States to comply with accounting provisions requiring the company to maintain books and records that accurately and fairly reflect all transactions of the corporation, including international subsidiaries, and to devise and maintain an adequate system of internal accounting controls for international operations. Activities that violate the FCPA, even if they occur wholly outside the United States, can result in criminal and civil fines, imprisonment, disgorgement, oversight, and debarment from government contracts.

Healthcare Reform

Current and future legislative proposals to further reform healthcare or reduce healthcare costs may result in lower reimbursement for our products, or for the procedures associated with the use of our products, or limit coverage of our products. The cost containment measures that payors and providers are instituting and the effect of any healthcare reform initiative implemented in the future could significantly reduce our revenues from the sale of our products. Alternatively, the shift away from fee-for-service agreements to capitated payment models may support the value of our products which can be shown to decrease resource utilization and lead to cost saving-for both payors and providers.

HIPAA and Other Privacy Laws

The Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act ("HIPAA") established comprehensive protection for the privacy and security of health information. The HIPAA standards apply to three types of organizations, or "Covered Entities": health plans, healthcare clearinghouses, and healthcare providers that conduct certain healthcare transactions electronically. Covered Entities and their business associates must have in place administrative, physical, and technical standards to guard against the misuse of individually identifiable health information. Some of our activities, including at our Lucid Test Centers and within our clinical trials, involve interactions with patients and their health information which implicate HIPAA. Our activities also involve us entering into specific kinds of relationships with Covered Entities and business associates of Covered Entities, which also implicate HIPAA. Penalties for violations of HIPAA include civil money and criminal penalties.

Our activities must also comply with other applicable privacy laws, which impose restrictions on the access, use and disclosure of personal information. More state and international privacy laws are being adopted. Many state laws are not preempted by HIPAA because they are more stringent or are broader in scope than HIPAA. Since 2020 we have also had to comply with the California Consumer Privacy Act of 2018, which protects personal information other than health information covered by HIPAA. In the E.U., the General Data Protection Regulation ("GDPR") took effect in May 2018 and imposes increasingly stringent data protection and privacy rules. All of these laws may impact our business and may change periodically, which could have an effect on our business operations if compliance becomes substantially costlier than under current requirements. Our failure to comply with these privacy laws or significant changes in the laws restricting our ability to obtain stool, blood and other patient samples and associated patient information could significantly impact our business and our future business plans.

Self-Referral Law

The federal "self-referral" law, commonly referred to as the "Stark" law, provides that physicians who, personally or through a family member, have ownership interests in or compensation arrangements with a laboratory are prohibited from making a referral to that laboratory for laboratory tests reimbursable by Medicare, and also prohibits laboratories from submitting a claim for Medicare payments for laboratory tests referred by physicians who, personally or through a family member, have ownership interests in or compensation arrangements with the testing laboratory. The Stark law contains a number of specific exceptions which, if met, permit physicians who have ownership or compensation arrangements with a testing laboratory to make referrals to that laboratory and permit the laboratory to submit claims for Medicare payments for laboratory tests performed pursuant to such referrals. We are subject to comparable state laws, some of which apply to all payors regardless of source of payment, and do not contain identical exceptions to the Stark law.

International Regulation

In order to market any product outside of the United States, we would need to comply with numerous and varying regulatory requirements of other countries and jurisdictions regarding quality, safety and efficacy and governing, among other things, clinical trials, marketing authorization, commercial sales and distribution of our products. We may be subject to regulations and product registration requirements in the areas of product standards, packaging requirements, labeling requirements, import and export restrictions and tariff regulations, duties and tax requirements. Whether or not we obtain FDA approval for a product, we would need to obtain the necessary approvals by the comparable foreign regulatory authorities before we can commence clinical trials or marketing of the product in foreign countries and jurisdictions. The time required to obtain clearance required by foreign countries may be longer or shorter than required for FDA clearance, and requirements for licensing a product in a foreign country may differ significantly from FDA requirements.

European Union

The European Union or EU will require a CE mark certification or approval in order to market our products in the various countries of the European Union or other countries outside the United States. To obtain CE mark certification of our products, we will be required to work with an accredited European notified body organization to determine the appropriate documents required to support certification in accordance with existing medical device directive. The predictability of the length of time and cost associated with such a CE mark may vary or may include lengthy clinical trials to support such a marking. Once the CE mark is obtained, we may market our product in the countries of the EU. The new European Medical Device Regulation (EU MDR 2017/745) which was scheduled to go into effect on May 26, 2020 has been extended by one year to May 26, 2021. The EU MDR imposes strict new requirements on medical device companies marketing their products in Europe. As such, many device companies have been scrambling to renew existing CE certificates granted under the Medical Devices Directive (MDD 93/42/EEC). Notified Bodies are now focused on their current customers and those customers' current devices making it virtually impossible to submit a new MDD application before May 2020.

European Good Manufacturing Practices

In the European Union, the manufacture of medical devices is subject to good manufacturing practice (GMP), as set forth in the relevant laws and guidelines of the European Union and its member states. Compliance with GMP is generally assessed by the competent regulatory authorities. Typically, quality system evaluation is performed by a Notified Body, which also recommends to the relevant competent authority for the European Community CE Marking of a device. The Competent Authority may conduct inspections of relevant facilities, and review manufacturing procedures, operating systems and personnel qualifications. In addition to obtaining approval for each product, in many cases each device manufacturing facility must be audited on a periodic basis by the Notified Body. Further inspections may occur over the life of the product.

Other Laws

Occupational Safety and Health

In addition to its comprehensive regulation of health and safety in the workplace in general, the Occupational Safety and Health Administration has established extensive requirements aimed specifically at laboratories and other healthcare-related facilities. In addition, because Lucid's operations may require employees to use certain hazardous chemicals, Lucid also must comply with regulations on hazard communication and hazardous chemicals in laboratories. These regulations require Lucid, among other things, to develop written programs and plans, which must address methods for preventing and mitigating employee exposure, the use of personal protective equipment, and training.

Specimen Transportation

Our commercialization activities for EsoGuard subject Lucid to regulations of the Department of Transportation, the United States Postal Service, and the Centers for Disease Control and Prevention that apply to the surface and air transportation of clinical laboratory specimens.

Environmental

The cost of compliance with federal, state and local provisions related to the protection of the environment has had no material effect on our business. There were no material capital expenditures for environmental control facilities in the years ended December 31, 2022, 2021 and 2020.

Employees

Currently, as of March 9, 2023 we had 124 employees (all of whom were full-time employees), inclusive of our executive officers — our Chairman of the Board of Directors and Chief Executive Officer ("CEO"), our President and Chief Financial Officer ("CFO"), our Chief Operating Officer ("COO"), our Chief Medical Officer ("CMO") and our General Counsel and Secretary ("General Counsel"). No employees are covered by a collective bargaining agreement. We consider our relationship with our employees to be good.

Corporate Information

We were incorporated in Delaware on June 26, 2014. Our corporate headquarters address is 360 Madison Avenue, 25th Floor, New York, NY 10017, and our main telephone number is (212) 949-4319.

Available Information

We make available free of charge through our website (www.pavmed.com) our periodic reports and registration statements filed with the United States Securities and Exchange Commission ("SEC"), including our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, or the "Exchange Act." We make these reports available through our website as soon as reasonably practicable after we electronically file such reports with, or furnish such reports to the SEC.

We also make available, free of charge on our website, the reports filed with the SEC by our named executive officers, directors, and 10% stockholders pursuant to Section 16 under the Exchange Act as soon as reasonably practicable after those filings are provided to us by those persons. The public also may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE., Washington, DC 20549, on official business days during the hours of 10 a.m. to 3 p.m. The public may obtain information on the operation of the Public Reference Room by calling the Commission at 1-800-SEC-0330. The SEC also maintains an Internet site (http://www.sec.gov) that contains reports, proxy and information statements, and other information regarding us that we file electronically with the SEC.

Our website address is www.pavmed.com. The content of our website is not incorporated by reference into this Annual Report on Form 10-K, nor in any other report or document we file or furnish with and /or submit to the SEC, and any reference to our website are intended to be inactive textual references only.

Item 1A. Risk Factors

The following risk factors and other information included in this Annual Report on Form 10-K should be carefully considered. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or we presently deem less significant may also impair our business operations. If any of the following risks occur, our business, financial condition, results of operations and future growth prospects could be materially and adversely affected.

Risk Factor Summary

Our business is subject to numerous risks and uncertainties that you should consider before investing in our common stock. These risks are described more fully below and include, but are not limited to, risks relating to the following:

Risks Related to Financial Position and Capital Resources

- We have incurred operating losses since our inception and may not be able to achieve profitability.
- Servicing our indebtedness may require a significant amount of cash, and the restrictive covenants contained in our indebtedness could adversely affect our business plan, liquidity, financial condition, and results of operations.
- The March 2023 Senior Convertible Note has not been issued, and it may not be issued, including if certain closing conditions to the issuance of such note are not satisfied.
- The accounting method for convertible debt securities that may be settled in cash, such as the Senior Convertible Notes, is the subject of recent changes that could have a material effect on our reported financial results.

Risks Associated with Our Business

- We will need substantial additional funding and may be unable to raise capital when needed, which could force us to delay, reduce, eliminate or abandon growth initiatives or product development programs.
- The markets in which we operate are highly competitive, and we may not be able to effectively compete against other providers of medical devices, particularly those with greater resources.
- We have finite resources, which may restrict our success in commercializing our current products and other products we may develop, and we may be unsuccessful in entering into or maintaining third-party arrangements to support our internal efforts.
- If we are unable to deploy and maintain effective sales, marketing and medical affairs capabilities, we will have difficulty achieving market awareness and selling our tests and other products.
- Our products may never achieve market acceptance.
- Recommendations, guidelines and quality metrics issued by various organizations may significantly affect payors' willingness to cover, and healthcare providers' willingness to prescribe, our products.
- We or our third-party manufacturers may not have the manufacturing and processing capacity to meet the production requirements of clinical testing or consumer demand in a timely manner.
- We currently perform our EsoGuard test in one laboratory facility. If demand for our EsoGuard test grows, we may lack adequate facility space and capabilities to meet increased processing requirements. Moreover, if these or any future facilities or our equipment were damaged or destroyed, or if we experience a significant disruption in our operations for any reason, our ability to continue to operate our business could be materially harmed.
- We may make investments in products we have not yet developed, and those investments may not be realized.
- Our products and services may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, thereby harming our business.
- Our products and services may cause serious adverse side effects or even death or have other properties that could delay or prevent their regulatory approval, limit the commercial desirability of an approved label or result in significant negative consequences following any marketing approval.
- Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.
- We may not be able to protect or enforce our intellectual property rights, which could impair our competitive position.
- We may be subject to intellectual property infringement claims by third parties which could be costly to defend, divert management's attention and resources, and may result in liability.
- Competitors may violate our intellectual property rights, and we may bring litigation to protect and enforce our intellectual property rights, which may result in substantial expense and may divert our attention from implementing our business strategy.
- Our business may suffer if we are unable to manage our growth.
- Our officers may allocate their time to other businesses thereby potentially limiting the amount of time they devote to our affairs. This conflict of interest could have a negative impact on our operations.
- Our ability to be successful will be totally dependent upon the efforts of our key personnel.
- Our officers and directors have fiduciary obligations to other companies and, accordingly, may have conflicts of interest in determining to which entity a particular business opportunity should be presented.
- Our business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which we conduct business.
- Our business may be adversely affected by health epidemics and or pandemics, including the COVID-19 pandemic.
- Failure in our information technology or storage systems could significantly disrupt our operations and our research and development efforts, which could adversely impact our revenues, as well as our research, development and commercialization efforts.
- We may become the subject of various claims, threats of litigation, litigation or investigations which could have a material adverse effect on our business, financial condition, results of operations or price of our common stock.

Risks Related to Regulatory Matters

- Any future products or services we may develop may not be approved for sale in the U.S. or in any other country. In order to obtain approval, we may need to conduct clinical trials necessary to support a FDA 510(k) notice or PMA application will be expensive and will require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit.
- The results of the Company's clinical trials may not support our product candidate claims or may result in the discovery of adverse side effects. In addition, delays or termination of our clinical trials may have an adverse impact on our ability to commercialize our product candidates.
- Even if we receive regulatory approval for any product we may develop, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements.
- Healthcare reform measures could hinder or prevent our products' commercial success.
- If we fail to comply with healthcare regulations, we could face substantial penalties and our business, operations and financial condition could be adversely affected.
- The Company's medical products may in the future be subject to product recalls that could harm its reputation, business and financial results.
- If the Company's medical products cause or contribute to a death or a serious injury, or malfunction in certain ways, we will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions.
- If the Company is found to be promoting the use of its devices for unapproved or "off-label" uses or engaging in other noncompliant activities, the Company may be subject to recalls, seizures, fines, penalties, injunctions, adverse publicity, prosecution, or other adverse actions, resulting in damage to its reputation and business.

Risks Associated with Ownership of Our Common Stock

- We may issue shares of our common and /or preferred stock in the future which could reduce the equity interest of our stockholders and might cause a change in control of our ownership.
- Our subsidiary Lucid may issue shares of its common and/or preferred stock in the future which could reduce the equity interest of PAVmed in Lucid and might cause us to cease to control a majority of the voting stock of Lucid.
- Our management and their affiliates control a substantial interest in us and thus may influence certain actions requiring a stockholder vote.
- There can be no assurance that our common stock will continue to trade on the Nasdaq Capital Market or another national securities exchange.
- A robust public market for our common stock may not be sustained, which could affect your ability to sell our common stock or depress the market price of our common stock.
- Our stock price may be volatile, and purchasers of our securities could incur substantial losses.
- Our outstanding warrants and other convertible securities may have an adverse effect on the market price of our common stock.
- We do not intend to pay any dividends on our common stock at this time.
- We are subject to evolving corporate governance and public disclosure expectations and regulations that impact compliance costs and risks of noncompliance.
- We incur significant costs as a result of our and Lucid Diagnostics operating as a public company, and our management will be required to devote substantial time to compliance initiatives.
- If we experience material weaknesses in our internal control over financial reporting in the future, our business may be harmed.
- If securities or industry analysts do not publish research, or publish inaccurate or unfavorable research, about our business, our stock price and trading volume could decline.
- Provisions in our corporate charter documents and under Delaware law could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Risks Related to Financial Position and Capital Resources

We have incurred operating losses since our inception and may not be able to achieve profitability.

We have incurred net losses since our inception.

To date, since our inception in June 2014, we have financed our operations principally through issuances of common stock, preferred stock, warrants, and debt, in both private placements and public offerings of our securities. Our ability to generate sufficient revenue from any of our products in development, and to transition to profitability and generate consistent positive cash flows is dependent upon factors that may be outside of our control. We expect our operating expenses will continue to increase as we continue to build our commercial infrastructure, develop, enhance and commercialize new products and incur additional operational and reporting costs associated with being a public company. As a result, we expect to continue to incur operating losses for the foreseeable future.

Servicing our indebtedness may require a significant amount of cash, and the restrictive covenants contained in our indebtedness could adversely affect our business plan, liquidity, financial condition, and results of operations.

We may be required to repay or redeem, or to pay interest on, the April 2022 Senior Convertible Note and the September 2022 Senior Convertible Note (collectively, the "Senior Convertible Notes") or any future permitted indebtedness incurred by us or our subsidiaries, in cash. Despite our right to pay the interest and principal balance of the Senior Convertible Notes by issuing shares of our common stock, we may be required to repay such indebtedness in cash, if we do not meet certain customary equity conditions (including minimum price and volume thresholds) or in certain other circumstances. For example, we may be required to repay the outstanding principal balance and accrued but unpaid interest, along with a premium, upon the occurrence of certain changes of control or an event of default.

Our ability to make payments of the principal of, to pay interest on, or to redeem our indebtedness in cash, depends on our future performance, which is subject to economic, financial, competitive and other factors beyond our control. We have not generated material revenue from operations to date, and our business may not generate cash flow from operations in the future sufficient to service our indebtedness and make necessary capital expenditures. In addition, the Senior Convertible Notes contain, and any future indebtedness may contain, restrictive covenants, including financial covenants. These payment obligations and covenants could have important consequences on our business. In particular, they could:

- require us to dedicate a substantial portion of our cash flow from operations to payments on our indebtedness;
- limit, among other things, our ability to borrow additional funds and otherwise raise additional capital, and our ability to conduct acquisitions, joint, ventures or similar arrangements, as a result of our obligations to make such payments and comply with the restrictive covenants in the indebtedness;
- limit our flexibility in planning for, or reacting to, changes in our businesses and the industries in which we operate;
- increase our vulnerability to general adverse economic and industry conditions; and
- place us at a competitive disadvantage compared to our competitors that have lower fixed costs.

The debt service requirements of any other permitted indebtedness we incur or issue in the future, as well as the restrictive covenants contained in the governing documents for any such indebtedness, could intensify these risks. For example, while the Company is currently in compliance with the financial covenants under the Senior Convertible Notes, from time to time since the date of issuance of such notes (including, in the case of the indebtedness to market capitalization ratio test under such notes, as of June 30, 2022 and December 31, 2022), the Company was not in compliance with certain financial covenants thereunder. While the holders of such notes agreed to waive any such non-compliance during such aforementioned time periods, there can be no assurance that it will do so in the future.

If we are unable to make the required cash payments, there could be a default under one or more of the instruments governing our indebtedness. Any such default or acceleration may further result in an event of default and acceleration of our other indebtedness. In such event, or if a default otherwise occurs under our indebtedness, including as a result of our failure to comply with the financial or other covenants contained therein, the holders of our indebtedness could require us to immediately repay the outstanding principal and interest on such indebtedness in cash, in some cases subject to a premium. Furthermore, the holders of our secured indebtedness could foreclose on their security interests in our assets.

If we are required to make payments under our indebtedness in cash and are unable to generate sufficient cash flow from operations, we may be required to sell assets, or we may seek to refinance the remaining balance, by either refinancing with the holder of the indebtedness, by raising sufficient funds through a sale of equity or debt securities or by obtaining a credit facility. No assurances can be given that we will be successful in making the required payments under our indebtedness, or in refinancing our obligations on favorable terms, or at all. Our ability to refinance our indebtedness will depend on the capital markets and our financial condition at such time. A failure to refinance could have a material adverse effect on our liquidity, financial position, and results of operations. Should we refinance, it could be dilutive to shareholders or impose onerous terms on us.

The March 2023 Senior Convertible Note has not been issued, and it may not be issued, including if certain closing conditions to the issuance of such note are not satisfied.

On March 13, 2023, Lucid entered into the Lucid SPA, pursuant to which Lucid anticipates issuing the March 2023 Lucid Senior Convertible Note. However, such issuance is subject to certain closing conditions, some of which are outside of Lucid's control. If any of the closing conditions to the issuance of the March 2023 Lucid Senior Convertible Note are not met, or if the Lucid Investor fails to purchase the March 2023 Lucid Senior Convertible Note when required to do so under the Lucid SPA, the note may not be issued.

The accounting method for convertible debt securities that may be settled in cash, such as the Senior Convertible Notes, is the subject of recent changes that could have a material effect on our reported financial results.

In May 2008, the Financial Accounting Standards Board ("FASB") issued FASB Staff Position No. APB 14-1, Accounting for Convertible Debt Instruments That May Be Settled in Cash Upon Conversion (Including Partial Cash Settlement), which has subsequently been codified as Accounting Standards Codification 470-20, Debt with Conversion and Other Options, or "ASC 470-20." Under ASC 470-20, an entity must separately account for the liability and equity components of the convertible debt instruments (such as the Senior Convertible Notes) that may be settled entirely or partially in cash in a manner that reflects the issuer's economic interest cost. The effect of ASC 470-20 on the accounting for the Senior Convertible Notes is that the equity component is required to be included in the additional paid-in capital section of stockholders' equity on our consolidated balance sheet and the value of the equity component would be treated as original issue discount for purposes of accounting for the debt component of the Senior Convertible Notes. As a result, we will be required to record a greater amount of non-cash interest expense in current periods presented as a result of the amortization of the discounted carrying value of the Senior Convertible Notes to their face amount over the term of the Senior Convertible Notes. We will report lower net income in our financial results because ASC 470-20 will require interest to include both the current period's amortization of the debt discount and the instrument's coupon interest, which could adversely affect our reported or future financial results, and the market price of our common stock.

In addition, under certain circumstances, convertible debt instruments (such as the Senior Convertible Notes) that may be settled entirely or partially in cash are currently accounted for utilizing the treasury stock method, the effect of which is that the shares issuable upon conversion of the Senior Convertible Notes are not included in the calculation of diluted earnings per share except to the extent that the conversion value of the Senior Convertible Notes exceeds their principal amount. Under the treasury stock method, for diluted earnings per share purposes, the transaction is accounted for as if the number of shares of our common stock that would be necessary to settle such excess, if we elected to settle such excess in shares, are issued. We cannot be sure that the accounting standards in the future will continue to permit the use of the treasury stock method. If we are unable to use the treasury stock method in accounting for the shares issuable upon conversion of the Senior Convertible Notes, then our diluted earnings per share would be adversely affected.

Risks Associated with Our Business

We will need substantial additional funding and may be unable to raise capital when needed, which could force us to delay, reduce, eliminate or abandon growth initiatives or product development programs.

We intend to continue to make investments to support our business growth. Because we have not generated any revenue or cash flow to date, we will require additional funds to:

- Continue our research and development;
- Pursue clinical trials;
- Commercialize our new products and services;
- Achieve market acceptance of our products and services;
- Establish and expand our sales, marketing, and distribution capabilities for our products and services;
- protect our intellectual property rights or defend, in litigation or otherwise, any claims we infringe third-party patents or other intellectual property rights;
- invest in businesses, products and technologies, although we currently have no commitments or agreements relating to do so.
- Otherwise fund our operations;

If we do not have, or are not able to obtain, sufficient funds, we may have to delay product development initiatives or license to third parties the rights to commercialize products or technologies we would otherwise seek to market. We also may have to reduce marketing, customer support or other resources devoted to our products.

The markets in which we operate are highly competitive, and we may not be able to effectively compete against other providers of medical devices, particularly those with greater resources.

We face intense competition from companies with dominant market positions in the medical device industry. These competitors have significantly greater financial, technical, marketing and other resources than we have and may be better able to:

- respond to new technologies or technical standards;
- react to changing customer requirements and expectations;
- acquire other companies to gain new technologies or products may displace our products;
- manufacture, market and sell products;
- acquire, prosecute, enforce and defend patents and other intellectual property;
- devote resources to the development, production, promotion, support and sale of products; and
- deliver a broad range of competitive products at lower prices.

We expect competition in the markets in which we participate to continue to increase as existing competitors improve or expand their product offerings.

We have finite resources, which may restrict our success in commercializing our current products and other products we may develop, and we may be unsuccessful in entering into or maintaining third-party arrangements to support our internal efforts.

To grow our business as planned, we must expand our sales, marketing and customer support capabilities, which will involve developing and administering our commercial infrastructure and/or collaborative commercial arrangements and partnerships. We must also maintain satisfactory arrangements for the manufacture and distribution of our tests and other products.

We have only two products, EsoGuard and the Veris Cancer Care Platform, that we are actively seeking to commercialize, and have not generated substantial revenue from product sales to date. We have limited experience managing a sales force, customer support operation, manufacturing and clinical laboratory operations for multiple products in multiple locations with divergent regulatory requirements. We may encounter difficulties retaining and managing the specialized workforce these activities require. We may seek to partner with others to assist us with any or all of these functions. Additionally, we may be unable to find appropriate third parties with whom to enter into these arrangements.

If we are unable to deploy and maintain effective sales, marketing and medical affairs capabilities, we will have difficulty achieving market awareness and selling our tests and other products.

To achieve commercial success for our EsoGuard test and the Veris Cancer Care Platform, as well as any products we commercialize in the future, we must continue to develop and grow our sales, marketing and medical affairs organizations to effectively explain to healthcare providers the reliability, effectiveness and benefits of our current and future tests and other products as compared to alternatives. We may not be able to successfully manage our dispersed or inside sales forces or our sales force may not be effective. Because of the competition for their services, we may be unable to hire, partner with or retain additional qualified sales representatives or marketing or medical affairs personnel, either as our employees or independent contractors or through independent sales or other third-party organizations. Market competition for commercial, marketing and medical affairs talent is significant, and we may not be able to hire or retain such talent on commercially reasonable terms, if at all.

Establishing and maintaining sales, marketing and medical affairs capabilities will be expensive and time-consuming. Our expenses associated with maintaining our sales force may be disproportional compared to the revenues we may be able to generate on sales of our EsoGuard test and the Veris Cancer Care Platform or any future tests or other products, and in order to establish and maintain these capabilities may required our raising additional capital, which we may be unable to do.

Our products may never achieve market acceptance.

To date, we have not generated significant sales revenues from our products and services. Our ability to generate sales revenues from product and services, and to achieve profitability will depend upon our ability to successfully commercialize our products and services. As we only recently began to market our two products and services for sale, we have no basis to predict whether our current products and services (or potential future products and services) will achieve market acceptance. A number of factors may limit the market acceptance of any of our products, including:

- the timing of regulatory approvals of our products and services and market entry compared to competitive products;
- the effectiveness of our products and services, including any potential side effects, as compared to alternative treatments;
- the rate of adoption of our products and services by hospitals, doctors and nurses and acceptance by the health care community;
- the labeling and /or inserts required by regulatory authorities for each of our products and services;
- the competitive features of our products and services, including price, as compared to other similar products and services;
- the availability of insurance or other third-party reimbursement, such as Medicare, for patients using our products and services;
- the extent and success of our marketing efforts and those of our collaborators; and
- unfavorable publicity concerning our products and services or similar products and services.

Recommendations, guidelines and quality metrics issued by various organizations may significantly affect payors' willingness to cover, and healthcare providers' willingness to prescribe, our products.

Securing influential recommendations, inclusion in healthcare guidelines and inclusion in quality measures are keys to our healthcare provider and payor engagement strategies. These guidelines, recommendations and quality metrics may shape payors' coverage decisions and healthcare providers' cancer screening procedures. There can be no assurance that we will be able to secure such recommendations or inclusion in healthcare guidelines and inclusion in quality measures. Any such failures could have a material impact on our ability to commercialize our products.

We or our third-party manufacturers may not have the manufacturing and processing capacity to meet the production requirements of clinical testing or consumer demand in a timely manner.

Our capacity to conduct clinical trials and commercialize our products will depend in part on our ability to manufacture or provide our products on a large scale, at a competitive cost and in accordance with regulatory requirements. We must establish and maintain a commercial scale manufacturing process for all of our products to complete clinical trials. We or our third-party manufacturers may encounter difficulties with these processes at any time that could result in delays in clinical trials, regulatory submissions or the commercialization of products.

For some of our products, we or our third-party manufacturers will need to have sufficient production and processing capacity in order to conduct human clinical trials, to produce products for commercial sale at an acceptable cost. We have limited experience in large-scale product manufacturing, nor do we have the resources or facilities to manufacture most of our products on a commercial scale. We cannot guarantee that we or our third-party manufacturers will be able to increase capacity in a timely or cost-effective manner, or at all.

Initially, we will not directly manufacture our products and will rely on third parties to do so for us. If our manufacturing and distribution agreements are not satisfactory, we may not be able to develop or commercialize products as planned. In addition, we may not be able to contract with third parties to manufacture our products in an economical manner. Furthermore, third-party manufacturers may not adequately perform their obligations, may delay clinical development or submission of products for regulatory approval or otherwise may impair our competitive position. We may not be able to enter into or maintain relationships with manufacturers that comply with good manufacturing practices. If a product manufacturer fails to comply with good manufacturing practices, we could experience significant time delays or we may be unable to commercialize or continue to market the products. Changes in our manufacturers could require costly new product testing and facility compliance inspections. In the United States, failure to comply with good manufacturing practices or other applicable legal requirements can lead to federal seizure of violative products, injunctive actions brought by the federal government, and potential criminal and civil liability on the part of a company and its officers and employees. Because of these and other factors, we may not be able to replace our manufacturing capacity quickly or efficiently in the event that our manufacturers are unable to manufacture our products at one or more of their facilities. As a result, the sales and marketing of our products could be delayed or we could be forced to develop our own manufacturing capacity, which could require substantial additional funds and personnel and compliance with extensive regulations.

The manufacturing processes for our products have not yet been tested at commercial levels, and it may not be possible to manufacture or process these materials in a cost-effective manner.

We currently perform our EsoGuard test in one laboratory facility. If demand for our EsoGuard test grows, we may lack adequate facility space and capabilities to meet increased processing requirements. Moreover, if these or any future facilities or our equipment were damaged or destroyed, or if we experience a significant disruption in our operations for any reason, our ability to continue to operate our business could be materially harmed.

We currently perform the EsoGuard test in a single laboratory facility in Lake Forest, CA. The laboratory facility, without purchasing additional lab equipment applicable to our test, is expected to have an annual capacity of approximately 50,000 tests per year. If demand for the EsoGuard test outstrips this capacity, and we fail to add additional equipment and staff, or complete, or timely complete, an expansion of its available laboratory facilities, it may significantly delay our EsoGuard processing times and limit the volume of EsoGuard tests we can process, which may adversely affect our business, financial condition and results of operation. In addition, our financial condition may be adversely affected if they are unable to complete these expansion projects on budget and otherwise on terms and conditions acceptable to us. Finally, our financial condition will be adversely affected if demand for our products and services does not materialize in line with our current expectations and if, as a result, we end up building excess capacity that does not yield a reasonable return on our investment.

If our present, or any future, laboratory facilities were to be damaged, destroyed or otherwise unable to operate, whether due to fire, floods, storms, tornadoes, other inclement weather events or natural disasters, employee malfeasance, terrorist acts, power outages, or otherwise, our business could be severely disrupted. We may not be able to perform our EsoGuard test or generate test reports as promptly as patients and healthcare providers require or expect, or possibly not at all. If we are unable to perform our EsoGuard test or generate test reports within a timeframe that meets patient and healthcare provider expectations, our business, financial results and reputation could be materially harmed.

We currently maintain insurance against damage to our property and equipment and against business interruption, subject to deductibles and other limitations. If we have underestimated our insurance needs with respect to an interruption, or if an interruption is not subject to coverage under our insurance policies, we may not be able to cover our losses.

We may make investments in products we have not yet developed, and those investments may not be realized.

While we are currently focused on the commercialization of our EsoGuard test and the Veris Cancer Care Platform, technology remains an important component of our business and growth strategy, and our success may depend on the development, implementation and acceptance of new products. Commitments to develop new products must be made well in advance of any resulting sales, and technologies and standards may change during development, potentially rendering our products outdated or uncompetitive before their introduction. Our ability to develop products to meet evolving industry requirements and at prices acceptable to our customers will be significant factors in determining our competitiveness. We may expend considerable funds and other resources on the development of new products without any guarantee these products will be successful. If we are not successful in bringing one or more products to market, whether because we fail to address marketplace demand, fail to develop viable technologies or otherwise, we may not generate any revenues and our results of operations could be seriously harmed.

Our products and services may become subject to unfavorable pricing regulations, third-party reimbursement practices or healthcare reform initiatives, thereby harming our business.

The regulations that govern marketing approvals, pricing and reimbursement for new products vary widely from country to country. Some countries require approval of the sale price of a product before it can be marketed. In many countries, the pricing review period begins after marketing approval is granted. In some foreign markets, pricing remains subject to continuing governmental control even after initial approval is granted. As a result, we might obtain regulatory approval for a product in a particular country, but then be subject to price regulations that delay our commercial launch of the product and negatively impact the revenue we are able to generate from the sale of the product in that country. Adverse pricing limitations may hinder our ability to recoup our investment in one or more other products we may develop, even if our other products we may develop obtain regulatory approval.

Our ability to commercialize any products we may develop successfully also will depend in part on the extent to which reimbursement for these products and related treatments becomes available from government health administration authorities, private health insurers and other organizations. Government authorities and third-party payors, such as private health insurers and health maintenance organizations, decide which treatments they will pay for and establish reimbursement levels. A primary trend in the U.S. healthcare industry and elsewhere is cost containment. Government authorities and these third-party payors have attempted to control costs by limiting coverage and the amount of reimbursement for particular treatments. We cannot be sure reimbursement will be available for any product we commercialize and, if reimbursement is available, what the level of reimbursement will be. Reimbursement may impact the demand for, or the price of, any product for which we obtain marketing approval. If reimbursement is not available or is available only to limited levels, we may not be able to successfully commercialize any product we successfully develop.

Moreover, eligibility for reimbursement does not imply any product will be paid for in all cases or at a rate that covers our costs, including research, development, manufacture, sale and distribution. Payment rates may vary according to the use of the product and the clinical setting in which it is used, may be based on payments allowed for lower cost products that are already reimbursed and may be incorporated into existing payments for other services. Net prices for products may be reduced by mandatory discounts or rebates required by government healthcare programs or private payors and by any future relaxation of laws that presently restrict imports of products from countries where they may be sold at lower prices than in the U.S. Third-party payors often rely upon Medicare coverage policy and payment limitations in setting their own reimbursement policies. Our inability to promptly obtain coverage and profitable payment rates from both government funded and private payors could have a material adverse effect on our operating results, our ability to raise capital needed to commercialize products and our overall financial condition. To obtain reimbursement or pricing approval in some countries, we may be required to conduct a clinical trial that compares the cost-effectiveness of our product to other available therapies. Our business could be materially harmed if reimbursement of any products we may develop, if any, is unavailable or limited in scope or amount or if pricing is set at unsatisfactory levels.

Our products and services may cause serious adverse side effects or even death or have other properties that could delay or prevent their regulatory approval, limit the commercial desirability of an approved label or result in significant negative consequences following any marketing approval.

The risk of failure of clinical development is high. It is impossible to predict when or if our current products and services or any we may develop will prove safe enough to receive regulatory approval. Undesirable side effects caused by our products and services or we may develop could cause us or regulatory authorities to interrupt, delay or halt clinical trials. They could also result in a more restrictive label or the delay or denial of regulatory approval by the FDA or other comparable foreign regulatory authority.

Additionally, even after receipt of marketing approval of our products and services, if we or others later identify undesirable side effects or even deaths caused by such product, a number of potentially significant negative consequences could result, including:

- we may be forced to recall such product and suspend the marketing of such product;
- regulatory authorities may withdraw their approvals of such product;
- regulatory authorities may require additional warnings on the label that could diminish the usage or otherwise limit the commercial success of such products;
- the FDA or other regulatory bodies may issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings about such product;
- the FDA may require the establishment or modification of Risk Evaluation Mitigation Strategies or a comparable foreign regulatory authority may require the establishment or modification of a similar strategy that may, for instance, restrict distribution of our products and impose burdensome implementation requirements on us;
- we may be required to change the way the product is administered or conduct additional clinical trials;
- we could be sued and held liable for harm caused to subjects or patients;
- we may be subject to litigation or product liability claims; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product.

Product liability lawsuits against us could cause us to incur substantial liabilities and to limit commercialization of any products that we may develop.

We face an inherent risk of product liability exposure related to the sale of any products we may develop. The marketing, sale and use of our current products and services and any we may additionally develop could lead to the filing of product liability claims against us if someone alleges product failures, product malfunctions, manufacturing flaws, or design defects, resulted in injury to patients. We may also be subject to liability for a misunderstanding of, or inappropriate reliance upon, the information we provide. If we cannot successfully defend ourselves against claims that any product, we may develop caused injuries, we may incur substantial liabilities. Regardless of merit or eventual outcome, liability claims may result in:

- decreased demand for our products;
- injury to our reputation and significant negative media attention;
- withdrawal of patients from clinical studies or cancellation of studies;
- significant costs to defend the related litigation and distraction to our management team;
- substantial monetary awards to patients;
- loss of revenue; and
- the inability to commercialize any products that we may develop.

In addition, insurance coverage is increasingly expensive. We may not be able to maintain insurance coverage at a reasonable cost or in an amount adequate to satisfy any liability that may arise.

We may not be able to protect or enforce our intellectual property rights, which could impair our competitive position.

Our success depends significantly on our ability to protect our rights to the patents, trademarks, trade secrets, copyrights and all the other intellectual property rights used, or expected to be used, in our products. Protecting intellectual property rights is costly and time consuming. We rely primarily on patent protection and trade secrets, as well as a combination of copyright and trademark laws and nondisclosure and confidentiality agreements to protect our technology and intellectual property rights. However, these legal means afford only limited protection and may not adequately protect our rights or permit us to gain or maintain any competitive advantage. Despite our intellectual property rights practices, it may be possible for a third party to copy or otherwise obtain and use our technology without authorization, develop similar technology independently or design around our patents.

We cannot be assured that any of our pending patent applications will result in the issuance of a patent to us. The U.S. Patent and Trademark Office (the "PTO"), or the applicable authorized in other countries in which we may seek to protect our intellectual property rights, may deny or require significant narrowing of claims in our pending patent applications, and patents issued as a result of the pending patent applications, if any, may not provide us with significant commercial protection or be issued in a form that is advantageous to us. We could also incur substantial costs in proceedings before the PTO, or foreign patent offices. Patents that may be issued to or licensed by us in the future may expire or may be challenged, invalidated or circumvented, which could limit our ability to stop competitors from marketing related technologies. Upon expiration of our issued or licensed patents, we may lose some of our rights to exclude others from making, using, selling or importing products using the technology based on the expired patents. There is no assurance that competitors will not be able to design around our patents.

We also rely on unpatented proprietary technology. We cannot assure you that we can meaningfully protect all our rights in our unpatented proprietary technology or that others will not independently develop substantially equivalent proprietary products or processes or otherwise gain access to our unpatented proprietary technology. We seek to protect our know-how and other unpatented proprietary technology, as trade secrets or otherwise, with confidentiality agreements and/or intellectual property assignment agreements with our team members, independent distributors and consultants. However, such agreements may not be enforceable or may not provide meaningful protection for our proprietary information in the event of unauthorized use or disclosure or other breaches of the agreements or in the event that our competitors discover or independently develop similar or identical designs or other proprietary information. Our trade secrets may be vulnerable to disclosure or misappropriation by employees, contractors and other persons.

We may be subject to intellectual property infringement claims by third parties which could be costly to defend, divert management's attention and resources, and may result in liability.

The medical device industry is characterized by vigorous protection and pursuit of intellectual property rights. Companies in the medical device industry have used intellectual property litigation to gain a competitive advantage in the marketplace. From time to time, third parties may assert against us their patent, copyright, trademark and other intellectual property rights relating to technologies that are important to our business. Searching for existing intellectual property rights may not reveal important intellectual property and our competitors may also have filed for patent protection, which is not publicly-available information, or claimed trademark rights that have not been revealed through our availability searches. We may be subject to claims that our team members have disclosed, or that we have used, trade secrets or other proprietary information of our team members' former employers. Our efforts to identify and avoid infringing on third parties' intellectual property rights may not always be successful. Any claims that our products or processes infringe these rights, regardless of their merit or resolution, could be costly, time consuming and may divert the efforts and attention of our management and technical personnel. In addition, we may not prevail in such proceedings given the complex technical issues and inherent uncertainties in intellectual property litigation.

Any claims of patent or other intellectual property infringement against us, even those without merit, could:

- increase the cost of our products;
- be expensive and/or time consuming to defend;
- result in our being required to pay significant damages to third parties;
- force us to cease making or selling products that incorporate the challenged intellectual property;
- require us to redesign, reengineer or rebrand our products and technologies;
- require us to enter into royalty or licensing agreements in order to obtain the right to use a third party's intellectual property on terms that may not be favorable or acceptable to us;
- require us to develop alternative non-infringing technology, which could require significant effort and expense;
- require us to indemnify third parties pursuant to contracts in which we have agreed to provide indemnification for intellectual property infringement claims; and,
- result in our customers or potential customers deferring or limiting their purchase or use of the affected products impacted by the claims until the claims are resolved.

Any of the foregoing could affect our ability to compete or have a material adverse effect on our business, financial condition and results of operations.

Competitors may violate our intellectual property rights, and we may bring litigation to protect and enforce our intellectual property rights, which may result in substantial expense and may divert our attention from implementing our business strategy.

We believe that the success of our business depends, in significant part, on obtaining patent protection for our products and technologies, defending our patents and preserving our trade secrets. Our failure to pursue any potential claim could result in the loss of our proprietary rights and harm our position in the marketplace. Therefore, we may be forced to pursue litigation to enforce our rights. Future litigation could result in significant costs and divert the attention of our management and key personnel from our business operations and the implementation of our business strategy.

Our business may suffer if we are unable to manage our growth.

If we fail to effectively manage our growth, our ability to execute our business strategy could be impaired. Any unanticipated rapid growth of our business may place a strain on our management, operations and financial systems. We need to ensure our existing systems and controls are adequate to support our business and its anticipated growth.

Our officers may allocate their time to other businesses thereby potentially limiting the amount of time they devote to our affairs. This conflict of interest could have a negative impact on our operations.

Our officers are not required to commit their full time to our affairs, which could create a conflict of interest when allocating their time between our operations and their other commitments. We presently expect each of our employees to devote such amount of time as they reasonably believe is necessary to our business. Certain of our officers are engaged in other business endeavors. If our officers' other business affairs require them to devote more substantial amounts of time to such affairs, it could limit their ability to devote time to our affairs and could have a negative impact on our operations. We cannot assure you these conflicts will be resolved in our favor.

Our ability to be successful will be totally dependent upon the efforts of our key personnel.

Our ability to successfully carry out our business plan is dependent upon the efforts of our key personnel. We cannot assure you that any of our key personnel will remain with us for the immediate or foreseeable future. The unexpected loss of the services of our key personnel could have a detrimental effect on us. We may also be unable to attract and retain additional key personnel in the future. As of March 9, 2023, we only have 672,190 shares available for issuance under our long-term incentive plan, which could limit our ability to attract and retain key personnel, until such amount is increased. An inability to attract and retain key personnel may impact our ability to continue and grow our operations.

Our officers and directors have fiduciary obligations to other companies and, accordingly, may have conflicts of interest in determining to which entity a particular business opportunity should be presented.

Certain of our officers and directors have fiduciary obligations to other companies engaged in medical device business activities. Accordingly, they may participate in transactions and have obligations that may be in conflict or competition with our business. As a result, a potential business opportunity may be presented by certain members of our board or management team to another entity prior to its presentation to us and we may not be afforded the opportunity to engage in such a transaction.

Our business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which we conduct business.

Our business, financial condition and results of operations could be adversely affected by the political and economic conditions of the countries in which we conduct business. These factors include:

- challenges associated with cultural differences, languages and distance;
- differences in clinical practices, needs, products, modalities and preferences;
- longer payment cycles in some countries;
- credit risks of many kinds;
- legal and regulatory differences and restrictions;
- currency exchange fluctuations;
- foreign exchange controls that might prevent us from repatriating cash earned in certain countries;
- political and economic instability and export restrictions;
- variability in sterilization requirements for multi-usage surgical devices;
- potential adverse tax consequences;
- higher cost associated with doing business internationally;
- challenges in implementing educational programs required by our approach to doing business;
- negative economic developments in economies around the world and the instability of governments, including the threat of war, terrorist attacks, epidemic or civil unrest;
- adverse changes in laws and governmental policies, especially those affecting trade and investment;
- health epidemics and /or pandemics, such as the epidemics resulting from the Ebola virus, or the enterovirus, or the avian influenza virus, or the pandemic resulting from a novel strain of a coronavirus designated "Severe Acute Respiratory Syndrome Coronavirus 2" - or "SARS-CoV-2", which may adversely affect our workforce as well as our local suppliers and customers;
- import or export licensing requirements imposed by governments;
- differing labor standards;
- differing levels of protection of intellectual property;
- the threat that our operations or property could be subject to nationalization and expropriation;
- varying practices of the regulatory, tax, judicial and administrative bodies in the jurisdictions where we operate; and
- potentially burdensome taxation and changes in foreign tax.

Our business may be adversely affected by health epidemics and or pandemics, including the COVID-19 pandemic.

The COVID-19 pandemic may have an adverse impact on our operations, supply chains, and distribution systems and /or those of our contractors of our laboratory partner, and increase our expenses, including as a result of impacts associated with preventive and precautionary measures being taken, restrictions on travel, quarantine polices. Such adverse impact may include, for example, the inability of our employees and /or those of our contractors or laboratory partner to perform their work or curtail their services provided to us.

In addition, the COVID-19 pandemic has disrupted the United States' healthcare and healthcare regulatory systems which could divert healthcare resources away from, or materially delay United States Food and Drug Administration ("FDA") approval with respect to our products.

Furthermore, our clinical trials have been and may be further affected by the COVID-19 pandemic, as site initiation and patient enrollment may be delayed, for example, due to prioritization of hospital resources toward the virus and /or illness response, as well as travel restrictions imposed by governments, and the inability to access clinical test sites for initiation and monitoring.

The COVID-19 pandemic may have an adverse impact on the economies and financial markets of many countries, including the United States, resulting in an economic downturn that could adversely affect demand for our products and services and /or our product candidates.

Although we are continuing to monitor and assess the effects of the COVID-19 pandemic on our business, the ultimate impact of the COVID-19 pandemic (or a similar health epidemic) is highly uncertain and subject to change, and therefore, its impact on our consolidated financial condition, consolidated results of operations, and /or consolidated cash flows, the adverse impact could be material.

Failure in our information technology or storage systems could significantly disrupt our operations and our research and development efforts, which could adversely impact our revenues, as well as our research, development and commercialization efforts.

Our ability to execute our business strategy depends, in part, on the continued and uninterrupted performance of our information technology ("IT") systems that support our operations and our research and development efforts, and those IT systems within the control of our contract manufacturers and contract laboratories. The integrity and protection of our own data, and that of our customers and employees, is critical to our business. The regulatory environment governing information, security and privacy laws is increasingly demanding and continues to evolve. IT systems are vulnerable to damage from a variety of sources, including telecommunications or network failures, malicious human acts and natural disasters. Moreover, despite network security and back-up measures, some of our servers are potentially vulnerable to physical or electronic break-ins, computer viruses and similar disruptive problems. Despite the precautionary measures we have taken to prevent unanticipated problems that could affect our IT systems, and the precautionary measures taken by our contract parties, sustained or repeated system failures that interrupt our ability to generate and maintain data, could adversely affect our ability to operate our business. Furthermore, any breach in our IT systems could lead to the unauthorized access, disclosure and use of non-public information, including protected health information, which is protected by HIPAA and other laws. Any such access, disclosure, or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, and damage to our reputation.

System upgrades, enhancements and replacements, as well as new systems, are required from time to time, and require significant expenditures and allocation of valuable employee resources. Delays in integration or disruptions to our business from implementation of these new or upgraded systems could have a material adverse impact on our financial condition and operating results. There can be no assurance that our process of improving existing systems, developing new systems to support our expanding operations, integrating new systems, protecting confidential patient information, and improving service levels will not be delayed or that additional systems issues will not arise in the future. Failure to adequately protect and maintain the integrity of our information systems issues and data may result in a material adverse effect on our financial position, results of operations and cash flows.

We may become the subject of various claims, threats of litigation, litigation or investigations which could have a material adverse effect on our business, financial condition, results of operations or price of our common stock.

We may become subject to various claims, threats of litigation, litigation or investigations, including commercial disputes and employee claims, and from time to time may be involved in governmental or regulatory investigations or similar matters. Any claims asserted against us or our management, regardless of merit or eventual outcome, could harm our reputation and have an adverse impact on our relationship with our clients, distribution partners and other third parties and could lead to additional related claims. Furthermore, there is no guarantee that we will be successful in defending ourselves in pending or future litigation or similar matters under various laws. Any judgments or settlements in any pending litigation or future claims, litigation or investigation could have a material adverse effect on our business, financial condition, results of operations and price of our common stock.

Risks Relating to Regulatory Matters

Any future products or services we may develop may not be approved for sale in the U.S. or in any other country. In order to obtain approval, we may need to conduct clinical trials necessary to support a FDA 510(k) notice or PMA application will be expensive and will require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit.

Our only products for which we have obtained approval or clearance from the FDA or a comparable foreign regulatory authority is our EsoCheck cell sample collection device and our CarpX minimally invasive surgical device. In certain limited circumstances, we also may market our products without such approval or clearance, as is the case for the EsoGuard LDT. Generally, however, neither we nor any future collaboration partner can commercialize any products we may develop in the U.S. or in any foreign country without first obtaining regulatory approval for the product, where applicable, from the FDA or comparable foreign regulatory authorities. The approval route in the U.S. for any products we may develop may be either via the PMA process, a de novo 510(k) pathway, or traditional 510(k). The PMA approval process is more complex, costly and time consuming than the 510(k) process. Additional randomized, controlled clinical trials may be necessary to obtain approval. The approval process may take several years to complete and may never be obtained. Before obtaining regulatory approvals for the commercial sale of any product we may develop in the U.S., we must demonstrate with substantial evidence, gathered in preclinical and well-controlled clinical studies, that the planned products are safe and effective for use for that target indication. We may not conduct such a trial or may not successfully enroll or complete any such trial. Any products we may develop may not achieve the required primary endpoint in the clinical trial and may not receive regulatory approval. We must also demonstrate that the manufacturing facilities, processes and controls for any products we may develop are adequate. Moreover, obtaining regulatory approval in one country for marketing of any products we may develop does not ensure we will be able to obtain regulatory approval in other countries, while a failure or delay in obtaining regulatory approval in one country may have a negative effect on the regulatory process in other countries. Failure to obtain regulatory approvals in foreign jurisdictions will prevent us from marketing our products internationally.

Even if we or any future collaboration partner were to successfully obtain a regulatory approval for any product we may develop, any approval might contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, or may be subject to burdensome post-approval study or risk management requirements. If we are unable to obtain regulatory approval for any products, we may develop in one or more jurisdictions, or any approval contains significant limitations, we may not be able to obtain sufficient revenue to justify commercial launch. Also, any regulatory approval of a product, once obtained, may be withdrawn. If we are unable to successfully obtain regulatory approval to sell any products we may develop in the U.S. or other countries, our business, financial condition, results of operations and growth prospects could be adversely affected.

Initiating and completing clinical trials necessary to support a FDA 510(k) notice or a PMA application will be time-consuming and expensive and the outcome uncertain. Moreover, the results of early clinical trials are not necessarily predictive of future results, and any product the Company advances into clinical trials may not have favorable results in early or later clinical trials. Conducting successful clinical studies will require the enrollment of large numbers of patients, and suitable patients may be difficult to identify and recruit. Patient enrollment in clinical trials and completion of patient participation and follow-up depend on many factors, including the size of the patient population, the nature of the trial protocol, the attractiveness of, or the discomforts and risks associated with, the treatments received by patients enrolled as subjects, the availability of appropriate clinical trial investigators, support staff, and proximity of patients to clinical sites and ability to comply with the eligibility and exclusion criteria for participation in the clinical trial and patient compliance. For example, patients may be discouraged from enrolling in our clinical trials if the trial protocol requires them to undergo extensive post-treatment procedures or follow-up to assess the safety and effectiveness of our products or if they determine that the treatments received under the trial protocols are not attractive or involve unacceptable risks or discomforts. Patients may also not participate in our clinical trials if they choose to participate in contemporaneous clinical trials of competitive products. In addition, patients participating in clinical trials may die before completion of the trial or suffer adverse medical events unrelated to investigational products. Further, the FDA may require the Company to submit data on a greater number of patients than it originally anticipated and/or for a longer follow-up period or change the data collection requirements or data analysis for any clinical trials. Delays in patient enrollment or failure of patients to continue to participate in a clinical trial may cause an increase in costs and delays in the approval and attempted commercialization of our products or result in the failure of the clinical trial. Such increased costs and delays or failures could adversely affect our business, operating results and prospects.

The results of the Company's clinical trials may not support our product candidate claims or may result in the discovery of adverse side effects. In addition, delays or termination of our clinical trials may have an adverse impact on our ability to commercialize our product candidates.

Because of unanticipated delays, the Company has been unable to successfully complete its clinical trials related to the EsoGuard test to generate clinical utility data showing that the results of the test influence's provider decisionmaking in providing medical care. As such clinical utility data is important to decisions by payor's to provide reimbursement for the test, continued delays in such trials will adversely impact our ability to commercialize the EsoGuard test and generate revenues from sales of the same.

Even if any of the Company's clinical trials are completed as planned, it cannot be certain that study results will support product candidate claims or that the FDA or foreign regulatory authorities will agree with our conclusions regarding them. Success in pre-clinical evaluation and early clinical trials does not ensure that later clinical trials will be successful, and we cannot be sure that the later trials will replicate the results of prior trials and pre-clinical studies. The clinical trial process may fail to demonstrate that our product candidates are safe and effective for the proposed indicated uses or otherwise influence medical decisions in the manner we need to show to evidence the clinical utility of our product candidates, which could cause us to abandon a product candidate and may delay development of others. In addition, if clinical data does not support our product candidate claims, the FDA could then bring legal or regulatory enforcement actions against the Company and/or its products including, but not limited to, recalls or requirements for pre-market 510(k) authorizations. The Company can give no assurance that its data will be substantiated in studies involving more patients. In such a case, the Company may never achieve significant revenues or profitability. Any delay or termination of our clinical trials will delay the filing of any related product submissions and, ultimately, our ability to commercialize our product candidates and generate revenues (in particular where evidence of clinical utility is a critical factor to payor's decisions around reimbursement). It is also possible that patients enrolled in clinical trials will experience adverse side effects that are not currently part of the product candidate's profile.

Even if we receive regulatory approval for any product we may develop, we will be subject to ongoing regulatory obligations and continued regulatory review, which may result in significant additional expense and subject us to penalties if we fail to comply with applicable regulatory requirements.

Once regulatory approval has been obtained, the approved product and its manufacturer are subject to continual review by the FDA or non-U.S. regulatory authorities. Our regulatory approval for any products we may develop may be subject to limitations on the indicated uses for which the product may be marketed. Future approvals may contain requirements for potentially costly post-marketing follow-up studies to monitor the safety and efficacy of the approved product. In addition, we are subject to extensive and ongoing regulatory requirements by the FDA and other regulatory authorities with regard to the labeling, packaging, adverse event reporting, storage, advertising, promotion and recordkeeping for our products. In addition, we are required to comply with cGMP regulations regarding the manufacture of any products we may develop, which include requirements related to quality control and quality assurance as well as the corresponding maintenance of records and documentation. Further, regulatory authorities must approve these manufacturing facilities before they can be used to manufacture drug products, and these facilities are subject to continual review and periodic inspections by the FDA and other regulatory authorities for compliance with cGMP regulations. If we or a third party discover previously unknown problems with a product, such as adverse events of unanticipated severity or frequency, or problems with the facility where the product is manufactured, a regulatory authority may impose restrictions on that product, the manufacturer or us, including requiring withdrawal of the product from the market or suspension of manufacturing.

Healthcare reform measures could hinder or prevent our products' commercial success.

There likely will be legislative and regulatory proposals at the federal and state levels directed at containing or lowering the cost of health care. We cannot predict the initiatives that may be adopted in the future or their full impact. The continuing efforts of the government, insurance companies, managed care organizations and other payors of healthcare services to contain or reduce costs of health care may adversely affect:

- our ability to set a price that we believe is fair for our products;
- our ability to generate revenue and achieve or maintain profitability; and
- the availability of capital.

Further, changes in regulatory requirements and guidance may occur, both in the United States and in foreign countries, and we may need to amend clinical study protocols to reflect these changes. Amendments may require us to resubmit our clinical study protocols to IRB's for reexamination, which may impact the costs, timing or successful completion of a clinical study. In light of widely publicized events concerning the safety risk of certain drug and medical device products, regulatory authorities, members of Congress, the Governmental Accounting Office, medical professionals and the general public have raised concerns about potential safety issues. These events have resulted in the recall and withdrawal of medical device products, revisions to product labeling that further limit use of products and establishment of risk management programs that may, for instance, restrict distribution of certain products or require safety surveillance or patient education. The increased attention to safety issues may result in a more cautious approach by the FDA or other regulatory authorities to clinical studies and the drug approval process. Data from clinical studies may receive greater scrutiny with respect to safety, which may make the FDA or other regulatory authorities more likely to terminate or suspend clinical studies before completion or require longer or additional clinical studies that may result in substantial additional expense and a delay or failure in obtaining approval or approval for a more limited indication than originally sought.

Given the serious public health risks of high profile adverse safety events with certain products, the FDA or other regulatory authorities may require, as a condition of approval, costly risk evaluation and mitigation strategies, which may include safety surveillance, restricted distribution and use, patient education, enhanced labeling, special packaging or labeling, expedited reporting of certain adverse events, preapproval of promotional materials and restrictions on direct-to-consumer advertising.

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

Even though we do not and will not control referrals of healthcare services or bill directly to Medicare, Medicaid or other third-party payors, certain federal and state healthcare laws and regulations pertaining to fraud and abuse and patients' rights are and will be applicable to our business. We could be subject to healthcare fraud and abuse and patient privacy regulation by both the federal government and the states in which we conduct our business. The regulations that may affect our ability to operate include, without limitation:

- the federal healthcare program Anti-Kickback Statute, which prohibits, among other things, any person from knowingly and willfully offering, soliciting, receiving or providing remuneration, directly or indirectly, in exchange for or to induce either the referral of an individual for, or the purchase, order or recommendation of, any good or service for which payment may be made under federal healthcare programs, such as the Medicare and Medicaid programs;
- the U.S. Foreign Corrupt Practices Act, or FCPA, which prohibits payments or the provision of anything of value to foreign officials for the purpose of obtaining or keeping business;
- the federal False Claims Act, or FCA, which prohibits, among other things, individuals or entities from knowingly presenting, or causing to be presented, false claims, or knowingly using false statements, to obtain payment from the federal government, and which may apply to entities like us which provide coding and billing advice to customers;
- federal criminal laws that prohibit executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters;
- the federal transparency requirements under the Health Care Reform Law requires manufacturers of drugs, devices, biologics and medical supplies to report to the Department of Health and Human Services information related to physician payments and other transfers of value and physician ownership and investment interests;
- the federal Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act, which governs the conduct of certain electronic healthcare transactions and protects the security and privacy of protected health information; and
- state law equivalents of each of the above federal laws, such as anti-kickback and false claims laws which may apply to items or services reimbursed by any third-party payor, including commercial insurers.

If our operations are found to be in violation of any of the laws described above or any other governmental regulations that apply to us, we may be subject to penalties, including civil and criminal penalties, damages, fines and the curtailment or restructuring of our operations. Any penalties, damages, fines, curtailment or restructuring of our operations could adversely affect our ability to operate our business and our financial results. Any action against us for violation of these laws, even if we successfully defend against it, could cause us to incur significant legal expenses and divert our management's attention from the operation of our business. Moreover, achieving and sustaining compliance with applicable federal and state privacy, security and fraud laws may prove costly.

The Company's medical products may in the future be subject to product recalls that could harm its reputation, business and financial results.

The FDA has the authority to require the recall of commercialized medical device products in the event of material deficiencies or defects in design or manufacture. In the case of the FDA, the authority to require a recall must be based on an FDA finding that there is a reasonable probability that the device would cause serious injury or death. Manufacturers may, under their own initiative, recall a product if any material deficiency in a device is found. A government-mandated or voluntary recall by the Company or one of its distributors could occur as a result of component failures, manufacturing errors, design or labeling defects or other deficiencies and issues. Recalls of any of the Company's products would divert managerial and financial resources and have an adverse effect on its financial condition and results of operations. The FDA requires that certain classifications of recalls be reported to the FDA within ten (10) working days after the recall is initiated. Companies are required to maintain certain records of recalls, even if they are not reportable to the FDA. The Company may initiate voluntary recalls involving its products in the future that the Company determines do not require notification of the FDA. If the FDA disagrees with the Company's determinations, they could require the Company to report those actions as recalls. A future recall announcement could harm the Company's reputation with customers and negatively affect its sales. In addition, the FDA could take enforcement action for failing to report the recalls when they were conducted. No recalls of the Company's medical products have been reported to the FDA.

If the Company's medical products cause or contribute to a death or a serious injury, or malfunction in certain ways, we will be subject to medical device reporting regulations, which can result in voluntary corrective actions or agency enforcement actions.

Under the FDA medical device reporting regulations, medical device manufacturers are required to report to the FDA information that a device has or may have caused or contributed to a death or serious injury or has malfunctioned in a way that would likely cause or contribute to death or serious injury if the malfunction of the device or one of our similar devices were to recur. If the Company fails to report these events to the FDA within the required timeframes, or at all, the FDA could take enforcement action against the Company. Any such adverse event involving its products also could result in future voluntary corrective actions, such as recalls or customer notifications, or agency action, such as inspection or enforcement action. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, will require the dedication of the Company's time and capital, distract management from operating our business, and may harm its reputation and financial results.

If the Company is found to be promoting the use of its devices for unapproved or "off-label" uses or engaging in other noncompliant activities, the Company may be subject to recalls, seizures, fines, penalties, injunctions, adverse publicity, prosecution, or other adverse actions, resulting in damage to its reputation and business.

The Company's labeling, advertising, promotional materials and user training materials must comply with the FDA and other applicable laws and regulations, including the prohibition of the promotion of a medical device for a use that has not been cleared or approved by the FDA. Obtaining 510(k) clearance or PMA approval only permits the Company to promote its products for the uses specifically cleared by the FDA. Use of a device outside its cleared or approved indications is known as "off-label" use. Physicians and consumers may use the Company's products off-label because the FDA does not restrict or regulate a physician's choice of treatment within the practice of medicine nor is there oversight on patient use of over-the-counter devices. Although the Company may request additional cleared indications for our current products, the FDA may deny those requests, require additional expensive clinical data to support any additional indications or impose limitations on the intended use of any cleared product as a condition of clearance. Even if regulatory clearance or approval of a product is granted, such clearance or approval may be subject to limitations on the intended uses for which the product may be marketed and reduce our potential to successfully commercialize the product and generate revenue from the product.

If the FDA determines that the Company's labeling, advertising, promotional materials, or user training materials, or representations made by Company personnel, include the promotion of an off-label use for the device, or that the Company has made false or misleading or inadequately substantiated promotional claims, or claims that could potentially change the regulatory status of the product, the agency could take the position that these materials have misbranded the Company's devices and request that the Company modifies its labeling, advertising, or user training or promotional materials and/or subject the Company to regulatory or legal enforcement actions, including the issuance of an Untitled Letter or a Warning Letter, injunction, seizure, recall, adverse publicity, civil penalties, criminal penalties, or other adverse actions. It is also possible that other federal, state, or foreign enforcement authorities might take action if they consider the Company's labeling, advertising, promotional, or user training materials to constitute promotion of an unapproved use, which could result in significant fines, penalties, or other adverse actions under other statutory authorities, such as laws prohibiting false claims for reimbursement. In that event, we would be subject to extensive fines and penalties and the Company's reputation could be damaged and adoption of the products would be impaired. Although the Company intends to refrain from statements that could be considered off-label promotion of its products, the FDA or another regulatory agency could disagree and conclude that the Company has engaged in off-label promotion. For example, the Company has made statements regarding some of its devices that the FDA may view as off-label promotion. In addition, any such off-label use of the Company's products may increase the risk of injury to patients, and, in turn, the risk of product liability claims, and such claims are expensive to defend and could divert the Company's management's attention and result in substantial damage awards against the Company.

Risks Associated with Ownership of Our Common Stock

We may issue shares of our common and /or preferred stock in the future which could reduce the equity interest of our stockholders and might cause a change in control of our ownership.

Our certificate of incorporation authorizes the issuance of up to 250,000,000 shares of common stock, par value $.001 per share, and 20,000,000 shares of preferred stock, par value $.001 per share. We may issue a substantial number of additional shares of our common stock or preferred stock, or a combination of common and preferred stock, to raise additional funds or in connection with any strategic acquisition. The issuance of additional shares of our common stock or any number of shares of our preferred stock:

- may significantly reduce the equity interest of investors;
- may subordinate the rights of holders of common stock if preferred stock is issued with rights senior to those afforded to our common stockholders;
- may cause a change in control if a substantial number of our shares of common stock are issued, which may affect, among other things, our ability to use our net operating loss carryforwards, if any, and most likely also result in the resignation or removal of some or all of our present officers and directors; and
- may adversely affect prevailing market prices for our common stock.

Our subsidiary Lucid may issue shares of its common and/or preferred stock in the future which could reduce the equity interest of PAVmed in Lucid and might cause us to cease to control a majority of the voting stock of Lucid.

As of the date hereof, our subsidiary Lucid has sold $13.625 million in shares of Series A Preferred Stock. If the maximum amount of common stock underlying such securities were issued, the percentage of shares of Lucid common stock held by PAVmed would be reduced from approximately 72% to approximately 59%. This reduced percentage would be further diluted in the event of future convertible debt or stock issuances by Lucid or by issuances under Lucid's long-term incentive plan and employee stock purchase plan. While PAVmed would still retain a large ownership interest in Lucid in such event, it may cease to control the vote on matters requiring shareholder approval, including the election of Lucid's board of directors.

Our management and their affiliates control a substantial interest in us and thus may influence certain actions requiring a stockholder vote.

As of December 31, 2022, our management and their affiliates collectively owned approximately 10% of our issued and outstanding shares of common stock. Accordingly, these individuals would have considerable influence regarding the outcome of any transaction that requires stockholder approval. Furthermore, our Board of Directors is and will be divided into three classes, each of which will generally serve for a term of three years with only one class of directors being elected in each year. As a consequence of our "staggered" Board of Directors, only a minority of the Board of Directors will be considered for election in any given year and our initial stockholders, because of their ownership position, will have considerable influence regarding the outcome.

There can be no assurance that our common stock will continue to trade on the Nasdaq Capital Market or another national securities exchange.

There can be no assurance that we will be able to continue to meet Nasdaq Capital Market listing standards. If we are unable to maintain compliance with all applicable listing standards, our common stock may no longer be listed on the Nasdaq Capital Market or another national securities exchange and the liquidity and market price of our common stock may be adversely affected. On December 29, 2022, the Company received a notice from the Listing Qualifications Department of The Nasdaq Stock Market LLC stating that, for the prior 30 consecutive business days (through December 28, 2022), the closing bid price of the Company's common stock had been below the minimum of $1 per share required for continued listing on the Nasdaq Capital Market. The notification letter stated that the Company would be afforded 180 calendar days (until June 27, 2023) to regain compliance. The Company intends to regain compliance through a reverse stock split. A special annual meeting at which the reverse stock split will be voted on is scheduled for March 31, 2023. However, there can be no assurance that the Company will be able to obtain the requisite shareholder vote to approve such a transaction.

A robust public market for our common stock may not be sustained, which could affect your ability to sell our common stock or depress the market price of our common stock.

We are unable to predict whether an active trading market for our common stock will be sustained. If an active market is not sustained for any reason, it may be difficult for you to sell your securities at the time you wish to sell them, at a price that is attractive to you, or at all. If the proposed reverse stock split discussed above is completed, the related reduction in outstanding shares would likely reduce the liquidity in our common stock.

Our stock price may be volatile, and purchasers of our securities could incur substantial losses.

Our stock price is likely to be volatile. The stock market in general, and the market for life science companies, and medical device companies in particular, have experienced extreme volatility that has often been unrelated to the operating performance of particular companies. The market price for our common stock may be influenced by many factors, including the following:

- factors in the public trading market for our stock that may produce price movements that may or may not comport with macro, industry or company-specific fundamentals, including, without limitation, the sentiment of retail investors (including as may be expressed on financial trading and other social media sites and online forums), the direct access by retail investors to broadly available trading platforms, the amount and status of short interest in our securities, access to margin debt, trading in options and other derivatives on our common stock and any related hedging and other trading factors

- speculation in the press or investment community about our company or industry
- our ability to successfully commercialize, and realize revenues from sales of, any products we may develop;
- the performance, safety and side effects of any products we may develop;
- the success of competitive products or technologies;
- results of clinical studies of any products we may develop or those of our competitors;
- regulatory or legal developments in the U.S. and other countries, especially changes in laws or regulations applicable to any products we may develop;
- introductions and announcements of new products by us, our commercialization partners, or our competitors, and the timing of these introductions or announcements;
- actions taken by regulatory agencies with respect to our products, clinical studies, manufacturing process or sales and marketing terms;
- variations in our financial results or those of companies that are perceived to be similar to us;
- the success of our efforts to acquire or in-license additional products or other products we may develop;
- developments concerning our collaborations, including but not limited to those with our sources of manufacturing supply and our commercialization partners;
- developments concerning our ability to bring our manufacturing processes to scale in a cost-effective manner;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures or capital commitments;
- developments or disputes concerning patents or other proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our products;
- our ability or inability to raise additional capital and the terms on which we raise it;
- the recruitment or departure of key personnel;
- changes in the structure of healthcare payment systems;
- market conditions in the medical device, pharmaceutical and biotechnology sectors;
- actual or anticipated changes in earnings estimates or changes in stock market analyst recommendations regarding our common stock, other comparable companies or our industry generally;
- trading volume of our common stock;
- sales of our common stock by us or our stockholders;
- general economic, industry and market conditions; and
- the other risks described in this “Risk Factors” section.

These broad market and industry factors may seriously harm the market price of our common stock, regardless of our operating performance. In the past, following periods of volatility in the market, securities class action litigation has often been instituted against companies. Such litigation, if instituted against us, could result in substantial costs and diversion of management’s attention and resources, which could materially and adversely affect our business, financial condition, results of operations and growth prospects.

Our outstanding warrants and other convertible securities may have an adverse effect on the market price of our common stock.

As of December 31, 2022, there were 94,510,537 shares of our common stock issued and outstanding, and, as of such date, we also had issued and outstanding:

(i) stock options to purchase 11,568,655 shares of our common stock at a weighted average exercise price of $2.71 per share, with such total number inclusive of both stock options granted under the PAVmed Inc. 2014 Long-Term Incentive Equity Plan (“PAVmed Inc. 2014 Equity Plan”);and 2,563,843 shares of our common stock reserved for issuance, but not subject to outstanding stock-based equity awards under the PAVmed Inc. 2014 Equity Plan; and 626,081 shares of our common stock reserved for issuance under the PAVmed Inc. Employee Stock Purchase Plan (“PAVmed Inc. ESPP”)

(ii) Series Z Warrants to purchase 11,937,450 shares of our common stock at an exercise price of $1.60 per share; and

(iii) Series B Convertible Preferred Stock of 1,205,759 shares, convertible into the same number of shares of our common stock.

In addition, the Senior Convertible Notes have a current outstanding principal amount of $32.7 million, which are convertible into 6,549,400 shares of our common stock (assuming the Senior Convertible Notes were converted in full on such date at the initial fixed conversion price of $5.00 per share). The number of shares of our common stock underlying the Senior Convertible Notes may increase if we conduct additional closings under the March 2022 SPA, pursuant to which we may issue Senior Convertible Notes with up to an additional $11,250,000 of principal amount. Furthermore, the number of shares of common stock to be issued under the Senior Convertible Notes may be substantially greater than the estimate set forth in this paragraph, if we pay the interest and the installments of principal in shares of our common stock, because in such cases (and in certain other cases as described elsewhere in this Annual Report on Form 10-K) the number of shares issued will be determined based on the then current market price (but in any event not more than fixed conversion price per share or less than a floor price specified in the notes). We cannot predict the market price of our common stock at any future date, and therefore, we are unable to accurately forecast or predict the total amount of shares that ultimately may be issued under these notes. In addition, the number of shares issued under these notes may be substantially greater if we voluntarily lower the conversion price, which we are permitted to do pursuant to the terms thereof.

The issuance of these shares will dilute our other equity holders, which could cause the price of our common stock to decline.

We do not intend to pay any dividends on our common stock at this time.

We have not paid any cash dividends on our shares of common stock to date. The payment of cash dividends on our common stock in the future will be dependent upon our revenues and earnings, if any, capital requirements and general financial condition and will be within the discretion of our Board of Directors. It is the present intention of our Board of Directors to retain all earnings, if any, for use in our business operations and, accordingly, our Board of Directors does not anticipate declaring any dividends on our common stock in the foreseeable future. As a result, any gain you will realize on our common stock (including common stock obtained upon exercise of our warrants) will result solely from the appreciation of such shares.

We are subject to evolving corporate governance and public disclosure expectations and regulations that impact compliance costs and risks of noncompliance.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including the SEC and Nasdaq, as well as evolving investor expectations around corporate governance and environmental and social practices and disclosures. These rules and regulations continue to evolve in scope and complexity, and many new requirements have been created in response to laws enacted by the U.S. and foreign governments, making compliance more difficult and uncertain. The increase in costs to comply with such evolving expectations, rules and regulations, as well as any risk of noncompliance, could adversely impact us.

We incur significant costs as a result of our and Lucid Diagnostics operating as a public company, and our management will be required to devote substantial time to compliance initiatives.

As a public company, with a majority-owned subsidiary that is also a public company, we incur significant legal, accounting and other expenses. We are subject to the reporting requirements of the Exchange Act, the other rules and regulations of the Securities and Exchange Commission, or SEC, and the rules and regulations of Nasdaq or any other national securities exchange on which our securities are then trading. Compliance with the various reporting and other requirements applicable to public companies requires considerable time and attention of management. For example, the Sarbanes-Oxley Act and the rules of the SEC and Nasdaq have imposed various requirements on public companies, including requiring establishment and maintenance of effective disclosure and financial controls. Our management and other personnel devote a substantial amount of time to these compliance initiatives. These rules and regulations result in significant legal and financial compliance costs and make some activities more time-consuming and costlier.

The Sarbanes-Oxley Act requires, among other things, that we maintain effective internal control over financial reporting and disclosure controls and procedures. In particular, we must 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, as required by Section 404 of the Sarbanes-Oxley Act. In addition, we will be required to have our independent registered public accounting firm attest to the effectiveness of our internal control over financial reporting beginning with our annual report on Form 10-K following the date on which we are no longer a smaller reporting company. Our compliance with Section 404 of the Sarbanes-Oxley Act requires that we incur substantial accounting expense and expend significant management efforts. We currently do not have an internal audit group, and as our business expands, we will need to hire additional accounting and financial staff with appropriate public company experience and technical accounting knowledge. If we are not able to comply with the requirements of Section 404 in a timely manner, or if we or our independent registered public accounting firm identify deficiencies in our internal control over financial reporting that are deemed to be material weaknesses, the market price of our stock could decline and we could be subject to sanctions or investigations by the SEC or other regulatory authorities, which would require additional financial and management resources.

Our ability to successfully implement our business plan and comply with Section 404 requires us to be able to prepare timely and accurate financial statements. We expect that we will need to continue to improve existing, and implement new operational and financial systems, procedures and controls to manage our business effectively. Any delay in the implementation of, or disruption in the transition to, new or enhanced systems, procedures or controls, may cause our operations to suffer and we may be unable to conclude that our internal control over financial reporting is effective and to obtain an unqualified report on internal controls from our auditors if required under Section 404 of the Sarbanes-Oxley Act. This, in turn, could have an adverse impact on trading prices for our common stock, and could adversely affect our ability to access the capital markets.

Under our management services agreement with Lucid Diagnostics, many of our personnel and other resources are devoted to ensuring Lucid Diagnostics complies with the above requirements applicable to public companies. This further exhausts management and other personnel resources that could be used for other revenue-generating activities.

If we experience material weaknesses in our internal control over financial reporting in the future, our business may be harmed.

Our management is responsible for establishing and maintaining adequate internal control over financial reporting and for evaluating and reporting on the effectiveness of our system of internal control. Our 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 reporting purposes in accordance with U.S. GAAP. As a public company, we are required to comply with the Sarbanes-Oxley Act and other rules that govern public companies. In particular, we are required to certify our compliance with Section 404 of the Sarbanes-Oxley Act, which requires us to furnish annually a report by management on the effectiveness of our internal control over financial reporting.

Although our management determined that our internal control over financial reporting was effective as of December 31, 2022, we may experience material weaknesses in our internal control over financial reporting in the future. Any necessary remediation efforts would place a significant burden on management and add increased pressure to our financial resources and processes. If we were are unable to successfully remediate any material weaknesses in our internal control over financial reporting that may be identified in the future in a timely manner, the accuracy and timing of our financial reporting may be adversely affected; our liquidity, our access to capital markets, the perceptions of our creditworthiness may be adversely affected; we may be unable to maintain or regain compliance with applicable securities laws, the listing requirements of the Nasdaq Stock Market; we may be subject to regulatory investigations and penalties; investors may lose confidence in our financial reporting; our reputation may be harmed; and our stock price may decline.

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

The trading market for our common stock will depend, in part, on the research and reports that securities or industry analysts publish about us or our business. If any analyst who covers us downgrades our stock or publishes inaccurate or unfavorable research about our business, our stock price would likely decline. In addition, if our operating results fail to meet the forecast of analysts, our stock price would likely decline. If one or more of these analysts cease coverage of our company or fail to publish reports on us regularly, demand for our common stock could decrease, which might cause our stock price and trading volume to decline.

Provisions in our corporate charter documents and under Delaware law could make an acquisition of us more difficult and may prevent attempts by our stockholders to replace or remove our current management.

Provisions in our corporate charter and our bylaws may discourage, delay or prevent a merger, acquisition or other change in control of us that stockholders may consider favorable, including transactions in which stockholders might otherwise receive a premium for their shares. These provisions could also limit the price that investors might be willing to pay in the future for shares of our common stock, thereby depressing the market price of our common stock. In addition, 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. Because our Board of Directors is responsible for appointing the members of our management team, these provisions could in turn affect any attempt by our stockholders to replace current members of our management team. Among others, these provisions include the following.

- our Board of Directors is divided into three classes with staggered three-year terms which may delay or prevent a change of our management or a change in control;
- our Board of Directors has the right to elect directors to fill a vacancy created by the expansion of our Board of Directors or the resignation, death or removal of a director, which will prevent stockholders from being able to fill vacancies on our Board of Directors;
- our certificate of incorporation prohibits cumulative voting in the election of directors, which limits the ability of minority stockholders to elect director candidates;
- our stockholders are required to provide advance notice and additional disclosures in order to nominate individuals for election to our Board of Directors or to propose matters that can be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company; and
- our Board of Directors is able to issue, without stockholder approval, shares of undesignated preferred stock, which makes it possible for our Board of Directors to issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us.

Moreover, because we are incorporated in Delaware, we are governed by the provisions of Section 203 of the Delaware General Corporation Law ("DGCL"), which prohibits a person who owns in excess of 15.0% of our outstanding voting stock from merging or combining with us for a period of three years after the date of the transaction in which the person acquired in excess of 15.0% of our outstanding voting stock, unless the merger or combination is approved in a prescribed manner.

Item 1B. Unresolved Staff Comments

Not applicable.

Item 2. Property

Our corporate offices are located at 360 Madison Avenue, 25th Floor, New York, NY 10017. The lease for this space is for seven years and eight months, starting on February 1, 2023, and may not be terminated prior to expiration of its stated term, except in limited circumstances due to misconduct by our landlord. The Company or its subsidiaries also have entered into leases for a research and development facility in Massachusetts with 7,375 square feet, which has a remaining term of 4.25 years, a CLIA laboratory in California with 21,019 square feet, which has a remaining term of 2 years, and an office space in Pennsylvania with 4,300 square feet, which has a remaining term of 4.8 years. We also have lease agreements for our Lucid Test Centers in various locations in Arizona, California, Colorado, Florida, Idaho, Illinois, Nevada, Ohio, Oregon, Texas and Utah that in the aggregate approximate 11,429 square feet. At this time, we consider our facility space to be commensurate with our current operations. Notwithstanding, we may obtain additional space in the future, as warranted by our business operations.

Effective with the respective lease commencement dates, subsequent to December 31, 2022, the Company and its subsidiaries have entered into additional lease agreements for additional Lucid Testing Centers with an aggregate of approximately 2,046 square feet.

Item 3. Legal Proceedings

See Note 12, *Commitment and Contingencies - Legal Proceedings*, of the consolidated financial statements included in this Annual Report, for a description of certain material legal proceedings involving the Company, which description is incorporated herein by reference.

Delaware Court of Chancery Complaint

On November 2, 2020, a stockholder of the Company, on behalf of himself and other similarly situated stockholders, filed a complaint in the Delaware Court of Chancery alleging broker non-votes were not properly counted in accordance with the Company's bylaws at the Company's Annual Meeting of Stockholders on July 24, 2020, and, as a result, asserted certain matters deemed to have been approved were not so approved (including matters relating to the increase in the size of the PAVmed Inc. 2014 Long-Term Incentive Equity Plan and the PAVmed Inc. Employee Stock Purchase Plan). The relief sought under the complaint included certain corrective actions by the Company, but did not seek any specific monetary damages. The Company did not believe it was clear the prior approval of these matters was invalid or otherwise ineffective. However, to avoid any uncertainty and the expense of further litigation, on January 5, 2021, the Company's board of directors determined it would be advisable and in the best interests of the Company and its stockholders to re-submit these proposals to the Company's stockholders for ratification and/or approval. In this regard, the Company held a special meeting of stockholders on March 4, 2021, at which such matters were ratified and approved. The parties reached agreement on a Settlement Term Sheet Agreement, dated January 28, 2021, to settle the complaint, the terms of which did not contemplate payment of monetary damages to the putative class in the proceeding. In connection with the foregoing, on August 3, 2022, the parties agreed that plaintiff's counsel would not seek an award from the Court in excess of $450,000, to be paid by the Company, upon Court approval, as compensation for the benefits conferred by the settlement, and the Company would not object to an award of up to such maximum amount. The settlement and a plaintiff's fee award of $450,000 were approved by the Court on November 3, 2022, with such award having been subsequently paid by the Company in December 2022.

Benchmark Investments, Inc. / Benchmark Investments LLC

On December 23, 2020, Benchmark Investments, Inc. filed a complaint against the Company in the U.S. District Court of the Southern District of New York alleging the registered direct offerings of shares of common stock of the Company completed in December 2020 were in violation of provisions set forth in an engagement letter between the Company and Kingswood Capital Markets, a "division" of Benchmark Investments, Inc. On December 16, 2021, the court granted PAVmed's motion to dismiss the case for lack of subject matter jurisdiction. On February 7, 2022, Benchmark Investments LLC, which claimed to be a successor to Benchmark Investments, Inc., filed a new complaint in the Supreme Court of the State of New York, New York County, asserting claims similar to those in the federal action, and adding to its allegations that financings conducted by the Company in January 2021 and February 2021 also violated the Company's engagement letter with Kingswood Capital Markets. In November 2022, the Company filed its answer to such complaint and asserted certain counterclaims against Kingswood Capital Markets, including for fraudulent inducement and breach of contract. The Company disagrees with the allegations made by Kingswood Capital Markets set forth in the complaint and intends to vigorously contest the complaint. On February 13, 2023, the Company entered into a settlement agreement (the "Settlement Agreement") with EF Hutton, a division of Benchmark Investments, LLC (f/k/a Kingswood Capital Markets, a division of Benchmark Investments, Inc.) ("EF Hutton") and Benchmark Investments, LLC (f/k/a Benchmark Investments, Inc.). Under the Settlement Agreement, the Company agreed to pay EF Hutton $450,000 in full and final satisfaction of all claims and disputes the parties made or could have made against one another arising out of or relating in any way to the above described actions. The Settlement Agreement also included a mutual release and certain other covenants that are customary for agreements of this nature. On February 17, 2023, the Company wired the settlement payment to EF Hutton. On that same date, the parties filed a stipulation of discontinuance, ending the action and resolving the dispute.

In the ordinary course of our business, particularly as it begins commercialization of its products, the Company may be subject to certain other legal actions and claims, including product liability, consumer, commercial, tax and governmental matters, which may arise from time to time. Except as otherwise noted herein, the Company does not believe it is currently a party to any other pending legal proceedings. Notwithstanding, legal proceedings are subject-to inherent uncertainties, and an unfavorable outcome could include monetary damages, and excessive verdicts can result from litigation, and as such, could result in a material adverse impact on the Company's business, financial position, results of operations, and /or cash flows. Additionally, although the Company has specific insurance for certain potential risks, the Company may in the future incur judgments or enter into settlements of claims which may have a material adverse impact on the Company's business, financial position, results of operations, and /or cash flows.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrants Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Market for Common Equity

Our common stock is traded on the Nasdaq Capital Market under the symbol "PAVM" and our Series Z Warrants are traded on the Nasdaq Capital Market under the symbol "PAVMZ." On December 29, 2022, we received a notice from the Listing Qualifications Department of Nasdaq stating that, for the prior 30 consecutive business days (through December 28, 2022), the closing bid price of our common stock had been below the minimum of $1 per share required for continued listing on the Nasdaq Capital Market under Nasdaq Listing Rule 5550(a)(2). The notification letter stated that the Company would be afforded 180 calendar days (until June 27, 2023) to regain compliance. See "*Recent Developments—Business—Nasdaq Notice*" in Item 7 below for more information.

Holders

As of March 9, 2023, there were 98,419,795 shares of our common stock outstanding. Our shares of common stock are held by an estimated 214 holders of record and we believe our shares of common stock are held by significantly more beneficial owners.

Dividends

Common Stock

We have not paid any cash dividends on our common stock to date. Any future decisions regarding dividends will be made by our board of directors. We do not anticipate paying dividends in the foreseeable future but expect to retain earnings to finance the growth of our business. Subject to the restrictions described below and applicable law, our board of directors has complete discretion on whether to pay dividends. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions, amongst and other factors deemed relevant.

As long as the Senior Convertible Notes (see "*Liquidity and Capital Resources*" in Item 7 below) are outstanding, we may not, directly or indirectly, redeem, or declare or pay any cash dividend or cash distribution on, any of our securities without the prior express written consent of the purchasers of the Senior Convertible Notes (other than as required by the Series B Convertible Preferred Stock). Furthermore, our common stock is junior to the Series B Convertible Preferred Stock with respect to dividends.

Series B Convertible Preferred Stock

The Series B Convertible Preferred Stock has a par value of $0.001 per share, no voting rights, a stated value of $3.00 per share, and at the holders' election, is convertible into shares of our common stock at a conversion price of $3.00 per share.

The Series B Convertible Preferred Stock accrues dividends at a rate of 8% per annum based on the $3.00 per share stated value. Dividends are payable in arrears on January 1, April 1, July 1, and October 1, 2023. Dividends accrue and cumulate whether or not declared by our board of directors. All accumulated and unpaid dividends compound quarterly at the rate of 8% of the stated value per annum. Dividends are payable at our election in any combination of shares of Series B Convertible Preferred Stock, cash or shares of our common stock.

During the periods ended December 31, 2022 and 2021, respectively, at each of the respective holders' election, a total of 45 and 210,448 shares of Series B Convertible Preferred Stock were converted into the same number of shares of common stock of PAVmed Inc.

During the period ended December 31, 2022, the Company's board of directors declared an aggregate of approximately $276 of Series B Convertible Preferred Stock dividends, earned as of December 31, 2021, March 31, 2022, June 30, 2022, and September 30, 2022, which have been settled by the issue of an additional aggregate 91,885 shares of Series B Convertible Preferred Stock.

During the period ended December 31, 2021, the Company's board of directors declared an aggregate of approximately $288 of Series B Convertible Preferred Stock dividends, earned as of December 31, 2020, March 31, 2021, June 30, 2021, and September 30, 2021, which have been settled by the issue of an additional aggregate 96,262 shares of Series B Convertible Preferred Stock.

Subsequent to December 31, 2022, in January 2023, the Company's board of directors declared a Series B Convertible Preferred Stock dividend earned as of December 31, 2022 and payable as of January 1, 2023, of approximately $72, to be settled by the issue of an additional 24,128 shares of Series B Convertible Preferred Stock (with such dividend not recognized as a dividend payable as of December 31, 2022, as the Company's board of directors had not declared such dividends payable as of such date).

Recent Sales of Unregistered Securities

Except as previously disclosed in our current reports on Form 8-K and quarterly reports on Form 10-Q or as described under the heading "*Recent Developments—Financing*" in Item 7 below, we did not sell any unregistered securities or repurchase any of our securities during the fiscal year ended December 31, 2022.

Item 6. [Reserved]

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

The following discussion and analysis of our consolidated financial condition and results of operations should be read together with our consolidated financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K (the "Financial Statements"). Some of the information contained in this discussion and analysis or set forth elsewhere in this Annual Report on Form 10-K, including information with respect to our plans and strategy for our business and related financing, includes forward-looking statements involving risks and uncertainties and should be read together with the "Forward-Looking Statements" and "Risk Factors" sections of this Annual Report on Form 10-K for a discussion of important factors which could cause actual results to differ materially from the results described in or implied by the forward-looking statements contained in the following discussion and analysis. Unless the context otherwise requires, references herein to "we", "us", and "our", and to the "Company" or "PAVmed" are to PAVmed Inc. and Subsidiaries, including its majority-owned subsidiaries, including Lucid Diagnostics Inc. ("Lucid Diagnostics" or "LUCID") and Veris Health Inc. ("Veris Health" or "VERIS").

Overview

PAVmed is a highly differentiated, multi-product, commercial-stage medical technology company organized to advance a broad pipeline of innovative medical technologies from concept to commercialization, employing a business model focused on capital efficiency and speed to market.

Our current central focus is predominantly on commercial expansion and execution including the acceleration of EsoGuard and Veris Cancer Care Platform commercialization. As resources permit, we will continue to explore internal and external innovations that fulfill our project selection criteria without limiting ourselves to any target specialty or condition. More broadly, we strive to maintain balance within our pipeline with shorter-term, lower-risk projects with the prospect for rapid commercialization and revenue generation supporting development of longer-term projects. At the same time, we are continuously re-assessing each project's long-term commercial potential relative to other projects in our pipeline, accelerating or decelerating the project and reallocating resources accordingly.

The Company operates in one segment as a medical technology company, with the following lines of business: Diagnostics, Medical Devices and Digital Health. Above in *Part I, Item 1 - Business* is a summary of each of our key products within these sectors, including in particular EsoGuard and the Veris Cancer Care Platform, currently our two leading products. We are also pursuing a number of research and development project and product opportunities across these three lines of business, which have either been developed internally or have been presented to us by clinician innovators and academic medical institutions for consideration..

Recent Developments

Business

Status of Lucid Clinical Trials

Lucid is currently seeking to accelerate its collection of clinical utility data through a range of trials that can be efficiently executed. These efforts include a planned investigator-initiated, retrospective analysis of prospectively collected data on the approximately 400 San Antonio fire fighters who underwent testing as part of a community-sponsored cancer awareness event (in respect of which we expect to publish results in the first half of 2023); an ongoing investigator-initiated, retrospective, single-center, study with 500 patients (in respect of which we expect to publish results mid-2023), a virtual-patient randomized controlled trial with intended recruitment of 100-200 physician participants (in respect of which we expect to publish results this year); a Lucid-sponsored multi-center, prospective, observational study with 500 patients; and a Lucid-sponsored registry at existing Lucid Test Centers, whereby all patients undergoing EsoCheck testing will be given the opportunity to provide informed consent and contribute data about their risk factors, EsoGuard results, and subsequent diagnostic and/or therapeutic journey. Both Lucid-sponsored observational/registry studies expect to have preliminary results and/or interim analysis before the end of 2023.

As previously disclosed, consequently, Lucid has decided to delay for the time being the two previously commenced clinical trials, the "EsoGuard screening study" ("BE-1") and the "EsoGuard case-control study" ("BE-2"), as Lucid is devoting our clinical resources to the studies cited above, which we expect will more efficiently generate the clinical data Lucid is currently prioritzing to drive EsoGuard commercialization.

LucidDx Labs Laboratory Operations Update

On February 14, 2023, Lucid Diagnostics and LucidDx Labs Inc. entered into an agreement (the "MSA Termination Agreement") with RDx, pursuant to which the parties mutually agreed to terminate the MSA-RDx without cause. The termination was effective as February 10, 2023. Until the termination of the MSA-RDx, RDx had continued to provide certain testing and related services for the Laboratory in accordance with the terms of the MSA-RDx. Recently, however, Lucid accelerated the development of internal resources necessary to operate the Laboratory entirely on its own. Accordingly, the Company believes that termination of the MSA-RDx will improve the efficiency of the performance of the EsoGuard assay.

Among other things, the MSA Termination Agreement reduces the remaining amounts of the earnout payments and management fees due under the APA-RDx and the MSA-RDx to $725,000 (from the $3,450,000 that would otherwise have been payable under the APA and MSA if the MSA had remained in effect through the balance of its stated term), resulting in a net savings to Lucid Diagnostics of $2,725,000. The payment was satisfied through the issuance of 553,436 shares of Lucid Diagnostics' common stock on February 25, 2023. Lucid Diagnostics was not required to make any cash payments in connection with the termination.

#CheckYourFoodTube Events

In January 2023, Lucid successfully completed its first #CheckYourFoodTube Precancer Testing Event, in partnership with Rachelle Hamblin, M.D., M.P.H., and the San Antonio Fire Department (SAFD), to detect esophageal precancer in at-risk members of the department. The SAFD testing event was held over two weekends in January, which has been designated as Firefighter Cancer Awareness Month by the International Association of Fire Fighters (IAFF). A total of 391 members, nearly one-quarter of the department, who were deemed by Dr. Hamblin to be at-risk for esophageal precancer, underwent a brief, on-site, noninvasive cell collection procedure, performed by Lucid clinical personnel using its EsoCheck® Esophageal Cell Collection Device. Firefighters with suspected esophageal precancer based on a positive EsoGuard result were identified, including some less than forty years of age, and will undergo appropriate monitoring and treatment, as indicated by clinical practice guidelines, to prevent progression to esophageal cancer. These events, which Lucid looks to expand across the country, are an extension of Lucid's recently introduced and expanding satellite Lucid Test Center (sLTC) program, which brings our precancer testing directly to patients—at their physician's office and now at large testing day events. Lucid demonstrated that its nurse practitioners can each perform up to fifty EsoCheck procedures in a day, and its laboratory team handled over two hundred incoming samples in a day, while maintaining turnaround times at target. These successes provide an excellent foundation for future testing events as we continue to drive EsoGuard commercialization using all the tools at our disposal.

Veris Health Commercialization Update

In December 2022, Veris Health signed a license agreement for the Veris CCP software with its first customer, New Jersey Cancer Care. Since, Veris Health onboarded the first cohort of patients of that practice onto the Veris CCP as well, and has signed license agreements with two additional cancer centers. These successes lay the groundwork for Veris Health's expansion plans with respect to the Veris CCP software as it seeks to onboard cancer centers and patients across the country.

NASDAQ Notice

On December 29, 2022, the Company received a notice from the Listing Qualifications Department of Nasdaq stating that, for the prior 30 consecutive business days (through December 28, 2022), the closing bid price of the Company's common stock had been below the minimum of $1 per share required for continued listing on the Nasdaq Capital Market under Nasdaq Listing Rule 5550(a)(2). The notification letter stated that the Company would be afforded 180 calendar days (until June 27, 2023) to regain compliance. In order to regain compliance, the closing bid price of the Company's common stock must be at least $1 for a minimum of ten consecutive business days. In February 2023, the Company distributed a proxy statement for a special meeting of shareholders to be held on March 31, 2023 (the "Special Meeting"), at which the Company will be seeking approval of an amendment to the Company's Certificate of Incorporation, to effect, at any time prior to the one-year anniversary date of the Special Meeting, (i) a reverse split of the Company's outstanding shares of common stock at a specific ratio, ranging from 1-for-5 to 1-for-15, to be determined by the board of directors of the Company in its sole discretion, and (ii) an associated reduction in the number of shares of common stock the Company is authorized to issue, from 250,000,000 shares to 50,000,000 shares. If the proposed reverse stock split is approved and implemented, the Company anticipates it will regain compliance with the Nasdaq requirements for continued listing.

Payroll and Benefit Expense Reimbursement Agreement

On November 30, 2022, PAVmed and Lucid entered into a payroll and benefit expense reimbursement agreement (the "PBERA"). Historically, PAVmed has paid for certain payroll and benefit-related expenses in respect of Lucid''s personnel on behalf of Lucid, and Lucid has reimbursed PAVmed for the same. Pursuant to the PBERA, PAVmed will continue to pay such expenses, and Lucid will continue to reimburse PAVmed for the same. The PBERA now provides that the expenses will be reimbursed on a quarterly basis or at such other frequency as the parties may determine, in cash or, subject to approval by the board of directors of each of PAVmed and Lucid, in shares of Lucid's common stock, with such shares valued at the volume weighted average price of such stock during the final ten trading days preceding the later of the two dates on which such stock issuance is approved by the board of directors of each of PAVmed and Lucid (subject to a floor price of $0.40 per share), or in a combination of cash and shares. However, in no event shall Lucid issue any shares of its common stock to PAVmed in satisfaction of all or any portion of the expenses if the issuance of such shares of its common stock would exceed the maximum number of shares of common stock that the Issuer may issue under the rules or regulations of The Nasdaq Stock Market LLC ("Nasdaq"), unless Lucid obtains the approval of its stockholders as required by the applicable rules of the Nasdaq for issuances of shares of its common stock in excess of such amount.

Financing

Securities Purchase Agreement - March 31, 2022 - Senior Secured Convertible Note - April 4, 2022 and Senior Secured Convertible Note - September 8, 2022

Effective as of March 31, 2022, we entered into a Securities Purchase Agreement ("SPA") with an accredited institutional investor ("Investor", "Lender", and /or "Holder"), pursuant to which we agreed to sell, and the Investor agreed to purchase an aggregate of $50.0 million face value principal of Senior Secured Convertible Notes. The SPA provided for the sale to the Investor of an initial Senior Secured Convertible Note with a face value principal of $27.5 million, which closed on April 4, 2022 (the "April 2022 Senior Convertible Note"). The SPA also provided for sales of additional Senior Secured Convertible Notes in one or more additional closings (upon the satisfaction of certain conditions), with an aggregate face value principal of up to an additional $22.5 million. The April 2022 Senior Convertible Note proceeds were $24.4 million after deducting a $2.5 million lender fee and the Company's offering costs of approximately $0.6 million, inclusive primarily of $0.5 million placement agent fees.

On September 8, 2022, we completed an additional closing under the SPA, in which we sold to the Investor an additional Senior Secured Convertible Note with a face value principal of $11.25 million (the "September 2022 Senior Convertible Note"). The September 2022 Senior Convertible Note proceeds were $10.0 million after deducting a $1.0 million lender fee and the Company's offering costs of approximately $0.2 million, inclusive primarily of placement agent fees.

See Note 14, *Debt*, to the Financial Statements for further discussion of the SPA dated March 31, 2022 and the senior convertible notes.

Lucid Diagnostics Inc. - Committed Equity Facility and ATM Facility

In March 2022, our majority-owned subsidiary, Lucid Diagnostics, entered into a committed equity facility with an affiliate of Cantor Fitzgerald ("Cantor"). Under the terms of the facility, Cantor committed to purchase up to $50 million of Lucid Diagnostics common stock from time to time upon the request of Lucid Diagnostics. While there are distinct differences, the facility is structured similarly to a traditional at-the-market equity facility, insofar as it allows Lucid Diagnostics to raise primary capital on a periodic basis at prices based on the existing market price. Through December 31, 2022, 680,263 shares of common stock of Lucid Diagnostics were issued under this facility for total proceeds of approximately $1.8 million.

In November 2022, Lucid Diagnostics also entered into an "at-the-market offering" for up to $6.5 million of its common stock that may be offered and sold under a Controlled Equity Offering Agreement between Lucid Diagnostics and Cantor Fitzgerald & Co. In the year ended December 31, 2022, there were no Lucid Diagnostics shares sold through their at-the-market equity facility. Subsequent to December 31, 2022, through March 9, 2023, Lucid Diagnostics sold 230,068 shares through its at-the-market equity facility for approximately $0.3 million.

Lucid Diagnostics - Series A Preferred Stock Offering

On March 7, 2023, Lucid entered into subscription agreements for the sale of 13,625 shares (the "*Lucid Series A Preferred Stock*"). Each share of the Lucid Series A Preferred Stock has a stated value of $1,000 and a conversion price of $1.394. The terms of the Lucid Series A Preferred Stock also include a one times preference on liquidation and a right to receive dividends equal to 20% of the number of shares of Lucid common stock into which such Lucid Series A Preferred Stock is convertible, payable on the one-year and two-year anniversary of the issuance date. The Lucid Series A Preferred Stock is a non-voting security, other than with respect to limited matters related to changes in terms of the Lucid Series A Preferred Stock. The aggregate gross proceeds from the sale of shares in such offering were $13.625 million.

Lucid Diagnostics - Private Placement - Securities Purchase Agreement

Effective as of March 13, 2023, Lucid entered into a Securities Purchase Agreement ("Lucid SPA") with an accredited institutional investor ("Lucid Investor", "Lucid Lender", and /or "Lucid Holder"), pursuant to which Lucid agreed to sell, and the Lucid Investor agreed to purchase a Senior Secured Convertible Note with a face value principal of up to $11.1 million (the "March 2023 Lucid Senior Convertible Note"). The issuance of the March 2023 Lucid Senior Convertible Note is subject to customary closing conditions.

The March 2023 Lucid Senior Secured Convertible Note would have a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of Lucid's common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of the two-year anniversary of the date of issuance. The March 2023 Lucid Senior Convertible Note would be convertible into or otherwise paid in shares of Lucid's common stock.

Under the March 2023 Lucid Senior Convertible Note, Lucid is and would be subject to certain customary affirmative and negative covenants regarding the incurrence of indebtedness, the existence of liens, the repayment of indebtedness and the making of investments, the payment of cash in respect of dividends, distributions or redemptions, the transfer of assets, the maturity of other indebtedness, and transactions with affiliates, among other customary matters. Under the March 2023 Lucid Senior Convertible Note, Lucid would also be subject to financial covenants requiring that (i) the amount of Lucid's available cash equal or exceed $5.0 million at all times, (ii) the ratio of (a) the outstanding principal amount of the notes issued under the Lucid SPA, accrued and unpaid interest thereon and accrued and unpaid late charges to (b) Lucid's average market capitalization over the prior ten trading days, not exceed 30%, and (iii) that Lucid's market capitalization shall at no time be less than an amount to be agreed upon.

Results of Operations

Overview

Revenue

The Company recognized revenue resulting from the delivery of patient EsoGuard test results when the Company considered the collection of such consideration to be probable to the extent that it is unconstrained. Additionally, revenue was recognized with respect to the EsoGuard Commercialization Agreement, dated August 1, 2021, between the Lucid Diagnostics Inc. and ResearchDx Inc. ("RDx"), a CLIA certified commercial laboratory service provider. On February 25, 2022, the EsoGuard Commercialization Agreement was terminated upon the execution of an Asset Purchase Agreement between the Company's wholly-owned subsidiary of LucidDx Labs Inc. and RDx.

Cost of revenue

Cost of revenues recognized from the delivery of patient EsoGuard test results includes costs related to EsoCheck device usage, shipment of test collection kits, royalties and the cost of services to process tests and provide results to physicians. We incur expenses for tests in the period in which the activities occur, therefore, gross margin as a percentage of revenue may vary from quarter to quarter due to costs being incurred in one period that relate to revenues recognized in a later period.

We expect that gross margin for our services will continue to fluctuate and be affected by EsoGuard test volume, our operating efficiencies, patient compliance rates, payor mix, the levels of reimbursement, and payment patterns of payors and patients.

The cost of revenue recognized with respect to the revenue recognized under the EsoGuard Commercialization Agreement is inclusive of: a royalty fee incurred under the Amended CWRU License Agreement; employee related costs of employees engaged in the administration to patients of the EsoCheck cell sample collection procedure (principally at the Lucid Test Centers); the EsoCheck devices and EsoGuard mailers (cell sample shipping costs) distributed to medical practitioners locations and the Lucid Test Centers; and Lucid Test Centers operating expenses, including rent expense and supplies.

Sales and marketing expenses

Sales and marketing expenses consist primarily of salaries and related costs for employees engaged in sales and marketing activities, as well as advertising and promotion expenses. We anticipate our sales and marketing expenses will increase in the future, to the extent we expand our commercial sales and marketing operations as resources permit.

General and administrative expenses

General and administrative expenses consist primarily of salaries and related costs for personnel, travel expenses, facility-related costs, professional fees, accounting and legal services, employees involved in third-party payor reimbursement contract negotiations and consultants and expenses associated with obtaining and maintaining patents within our intellectual property portfolio.

We anticipate our general and administrative expenses will increase in the future as and to the extent our business operations grow. We also anticipate continued expenses related to being a public company, including audit, legal, regulatory, and tax-related services associated with maintaining compliance as a public company, insurance premiums and investor relations costs.

Research and development expenses

Research and development expenses are recognized in the period they are incurred and consist principally of internal and external expenses incurred for the research and development of our products, including:

- consulting costs charged to us by various external contract research organizations we contract with to conduct clinical and preclinical studies and engineering design and development;
- salary and benefit costs associated with our chief medical officer and engineering personnel;
- costs associated with regulatory filings;
- patent license fees;
- cost of laboratory supplies and acquiring, developing, and manufacturing preclinical prototypes;
- product design engineering studies; and
- rental expense for facilities maintained solely for research and development purposes.

Our current research and development activities, including our clinical trials, are focused principally on the acceleration of EsoGuard and Veris Cancer Care Platform commercialization. We will resume research and development activities with respect to as well as applicable new technologies, as resources permit.

Other Income and Expense, net

Other income and expense, net, consists principally of changes in fair value of our convertible notes and losses on extinguishment of debt upon repayment of such convertible notes.

Results of Operations - continued

Presentation of Dollar Amounts

All dollar amounts in this Management's Discussion and Analysis of Financial Condition and Results of Operations are presented as dollars in millions, except for per share amounts.

The year ended December 31, 2022 as compared to the year ended December 31, 2021

Revenue

In the year ended December 31, 2022, revenue was $0.4 million as compared to $0.5 million in the prior year. The $0.1 million decrease principally relates to the termination of the EsoGuard Commercialization Agreement with RDx, as the Company transitioned to its own laboratory operations effective February 25, 2022. The decrease was partially offset by revenue for our EsoGuard Esophageal DNA Test performed in our own CLIA laboratory for the year ended December 31, 2022.

Cost of revenue

In the year ended December 31, 2022, cost of revenue was approximately $3.6 million as compared to $0.6 million in the prior year. The $3.0 million increase principally related to:

- approximately $0.5 million increase in compensation related costs as a result of an increase in headcount;
- approximately $0.8 million increase in EsoCheck and EsoGuard supplies usage costs; and
- approximately $1.7 million increase in laboratory operations costs.

Sales and marketing expenses

In the year ended December 31, 2022, sales and marketing costs were approximately $19.3 million, compared to $8.9 million in the prior year. The net increase of $10.4 million was principally related to:

- approximately $7.4 million increase in compensation related costs principally as a result of an increase in headcount;
- approximately $1.2 million increase in stock based compensation from RSA grants to Lucid Diagnostics and PAVmed employees and non-employees, and an increase in stock options granted corresponding with the increase in headcount;
- approximately $1.6 million increase in consulting and outside professional services; and
- approximately $0.2 million increase general business expenses.

General and administrative expenses

In the year ended December 31, 2022, general and administrative costs were approximately $41.0 million, compared to $25.4 million in the prior year. The net increase of $15.6 million was principally related to:

- approximately $3.5 million increase in compensation related costs principally as a result of an increase in headcount;
- approximately $1.3 million increase in stock based compensation from RSA grants to Lucid and PAVmed employees and non-employees, and an increase in stock options granted corresponding with the increase in the number of employees;
- approximately $9.2 million increase in consulting services related to patents, regulatory compliance, legal processes for contract review, transition of public relations and investor relations firms, and public company expenses; and
- approximately $1.6 million increase in general business expenses.

Research and development expenses

In the year ended December 31, 2022, research and development costs were approximately $25.5 million as compared to $19.8 million in the prior year. The net increase $5.7 million was principally related to:

- approximately $3.2 million increase in development costs, particularly in clinical trial activities and outside professional and consulting fees with respect to EsoCheck, Veris Cancer Care Platform, CarpX, EsoCure and PortIO; and
- approximately $2.5 million increase in compensation related costs and related to expanded clinical and engineering staff.

As mentioned above, above we have paused research and development with respect to CarpX, EsoCure and PortIO. Until such time as resources permit, we expect to devote our research and development efforts to EsoGuard, EsoCheck and the Veris Cancer Care Platform.

Amortization of Acquired Intangible Assets

In the year ended December 31, 2022, the amortization of acquired intangible assets was approximately $1.8 million as compared to $0.1 million in the prior year. The net increase was principally related to the purchase of a defensive asset in Q4 2021 and the purchase of laboratory licenses and certifications and laboratory information management software in Q1 2022.

Results of Operations - continued

The year ended December 31, 2022 as compared to the year ended December 31, 2021 - continued

Other Income and Expense

Change in fair value of convertible debt

In the year ended December 31, 2022, the non-cash expense recognized for the change in the fair value of our convertible notes was approximately $1.3 million, related to both the April 2022 and September 2022 Senior Convertible Notes. The April 2022 and September 2022 Senior Convertible Notes were initially measured at their issue-date estimated fair value and subsequently remeasured at estimated fair value as of the reporting period date. The Company initially recognized a $3.5 million fair value non-cash expense on the issue-dates. This initial recognition was partially offset by $2.2 million of decreases in fair value upon remeasurements through December 31, 2022.

In the year ended December 31, 2021, the non-cash income (expense) recognized for the change in the fair value of our convertible notes was approximately $1.7 million of other income. The change in the fair value adjustment of the convertible notes is principally related to each of the convertible notes being repaid-in-full during the year ended December 31, 2021, as discussed herein below under "Loss from Extinguishment of Debt."

Loss on Issue and Offering Costs - Senior Secured Convertible Note

In the year ended December 31, 2022, in connection with the issue of both the April 2022 and the September 2022 Senior Convertible Notes, we recognized a total of approximately $4.3 million of other expense, inclusive of approximately $3.5 million of lender fee non-cash expense, and approximately $0.8 million of offering costs paid by us.

Loss on Debt Extinguishment

In the year ended December 31, 2022, a debt extinguishment loss in the aggregate of approximately $5.4 million was recognized in connection with our April 2022 Senior Convertible Note as discussed below.

- In 2022, approximately $6.0 million of principal repayments along with $0.4 million of interest expense thereon, were settled through the issuance of 7,189,358 shares of common stock of the Company, with such shares having a fair value of approximately $11.8 million (with such fair value measured as the respective conversion date quoted closing price of the common stock of the Company). The conversions resulted in a debt extinguishment loss of $5.4 million in the year ended December 31, 2022.

In the prior year ended December 31, 2021, a debt extinguishment loss in the aggregate of approximately $3.7 million was recognized in connection with the (previous) convertible notes, as discussed below.

- On January 5, 2021, the repayment of the remaining face value principal of the November 2019 Senior Convertible Note, along with the payment of interest thereon of approximately $1.0 million, were settled with the issuance of 667,668 shares of our common stock, with a fair value of approximately $1.7 million (with such fair value measured as the respective conversion date quoted closing price of our common stock), resulting in the recognition of a loss from extinguishment of debt of approximately $0.8 million in the year ended December 31, 2021; and,

- On January 30, 2021, we paid in cash a $350 partial principal repayment of the Senior Convertible Note dated April 30, 2020 ("April 2020 Senior Convertible Note"); and on March 2, 2021, we made a cash payment of approximately $14.5 million, resulting in the repayment-in-full on such date of both the April 2020 Senior Convertible Note and the Senior Secured Convertible Note dated August 6, 2021, resulting in the recognition of a loss from extinguishment of debt of approximately $3.0 million in the year ended December 31, 2021.

See Note 14*, Debt*, to the Financial Statements, for additional information with respect to the April 2022 and the September 2022 Senior Convertible Note.

Liquidity and Capital Resources

Our current operational activities are principally focused on the commercialization of EsoGuard and the Veris Cancer Care Platform, and, as resource permit, our development activities would be focused on pursuing FDA approval and clearance of other lead products in our product portfolio pipeline. Our ability to generate revenue depends upon successfully advancing the commercialization of EsoGuard and the Veris Cancer Care Platform while, as resources permit, also completing the development and the necessary regulatory approvals of our other products and services. There are no assurances, however, we will be able to obtain an adequate level of financial resources required for the short-term or long-term commercialization and development of its products and services.

We have financed our operations principally through the public and private issuances of our common stock, preferred stock, common stock purchase warrants, and debt. We are subject to all of the risks and uncertainties typically faced by medical device and diagnostic and medical device companies that devote substantially all of their efforts to the commercialization of their initial product and services and ongoing R&D and clinical trials. We expect to continue to experience recurring losses from operations, and will continue to fund our operations with debt and/or equity financing transactions. Notwithstanding, however, with the cash on-hand as of the date hereof and other debt and equity committed sources of financing, we expect to be able to fund our future operations for one year from the date of the issue of the Financial Statements.

Issue of Shares of Our Common Stock

During the year ended December 31, 2022

- We issued 299,999 shares of our common stock for cash proceeds of approximately $0.3 million upon exercise of stock options granted under the PAVmed 2014 Equity Plan, as such equity plan is discussed in Note 15, *Stock-Based Compensation*, to the Financial Statements.

- We issued 385,938 shares of our common stock for proceeds of approximately $0.4 million under the PAVmed Employee Stock Purchase Plan (“ESPP”), as such plan is discussed in Note 15, *Stock-Based Compensation,* to the Financial Statements.

- We issued 106,225 shares of our common stock for proceeds of approximately $0.1 million from the sale of shares through PAVmed’s at-the-market equity facility through Cantor Fitzgerald & Co.

Securities Purchase Agreement - March 31, 2022 - Senior Secured Convertible Notes - April 4, 2022 and September 8, 2022

Effective as of March 31, 2022, we entered into the SPA with the Investor, pursuant to which we agreed to sell, and the Investor agreed to purchase an aggregate of $50.0 million face value principal of Senior Secured Convertible Notes. The SPA provided for the sale of the initial Senior Secured Convertible Note with a face value principal of $27.5 million, which closed on April 4, 2022 (referred to as the “April 2022 Senior Convertible Note”). The SPA also provided for sales of additional Senior Secured Convertible Notes in one or more additional closings (upon the satisfaction of certain conditions), with an aggregate face value principal of up to an additional $22.5 million. The April 2022 Senior Secured Convertible Note has a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of the Company’s common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of April 4, 2024. The April 2022 Senior Convertible Note may be converted into or otherwise paid in shares of our common stock as described in Note 14, Debt. The April 2022 Senior Convertible Note proceeds were $24.4 million after deducting a $2.5 million lender fee and the Company’s offering costs of approximately $0.6 million, inclusive primarily of $0.5 million placement agent fees.

On September 8, 2022, we completed an additional closing under the SPA, in which we sold to the Investor an additional Senior Secured Convertible Note with a face value principal of $11.25 million (referred to as the “September 2022 Senior Convertible Note”). The September 2022 Senior Secured Convertible Note has a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of the Company’s common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of September 6, 2024. The September 2022 Senior Convertible Note may be converted into or otherwise paid in shares of our common stock as described in Note 14, Debt. The September 2022 Senior Convertible Note proceeds were $10.0 million after deducting a $1.0 million lender fee and the Company’s total offering costs of approximately $0.2 million, inclusive primarily of placement agent fees.

Liquidity and Capital Resources - continued

On August 9, 2022, the Company and the Investor also agreed, in connection with the waiver described in Note 14, *Debt*, to the Financial Statements, that the Investor may convert up to $5.0 million of the principal amount of the April 2022 Senior Convertible Note at the then current conversion price as if the date of conversion were an Installment Date, i.e. a price per share of common stock equal to the lower of (i) the fixed conversion price then in effect (currently $5.00) and (ii) 82.5% of the average VWAP of the Company's common stock for each of the two trading days with the lowest VWAP of the Company's common stock during the ten consecutive trading day period ending and including the trading day immediately prior to the applicable conversion date, but in the case of clause (ii), not less than $0.18 per share. As contemplated by such amendment, in the year ended December 31, 2022, approximately $6.0 million of principal repayments along with $0.4 million of interest expense thereon, were settled through the issuance of 7,189,358 shares of our common stock.

Under the Senior Convertible Notes and the SPA, we are subject to certain customary affirmative and negative covenants regarding the incurrence of indebtedness, the existence of liens, the repayment of indebtedness and the making of investments, the payment of cash in respect of dividends, distributions or redemptions, the transfer of assets, the maturity of other indebtedness, and transactions with affiliates, among other customary matters. We also are subject to financial covenants requiring that (i) the amount of our available cash equal or exceed $8.0 million at all times, (ii) the ratio of (a) the outstanding principal amount of the notes issued under the SPA, accrued and unpaid interest thereon and accrued and unpaid late charges to (b) our average market capitalization over the prior ten trading days, not exceed 30% (except that such maximum percentage is 50% for the period from September 8, 2022 through March 5, 2023) (the "Debt to Market Cap Ratio Test"), and (iii) that our market capitalization shall at no time be less than $75 million (the "Market Cap Test" and, together with the Debt to Market Cap Ratio Test, the "Financial Tests"). From time to time from and after September 8, 2022, including as of December 31, 2022, the Company was not in compliance with the Financial Tests. As of March 12, 2023, the Investor agreed to waive any such non-compliance during such aforementioned time periods, under the Senior Convertible Notes and the SPA. Accordingly, as of the date of this Form 10-K, the Company is in compliance with the Financial Tests.

See Note 14*, Debt*, to the Financial Statements for additional information about the SPA and the Senior Secured Convertible Notes.

Lucid Diagnostics - Series A Preferred Stock Offering

On March 7, 2023, Lucid entered into subscription agreements for the sale of 13,625 shares (the "*Lucid Series A Preferred Stock*"). Each share of the Lucid Series A Preferred Stock has a stated value of $1,000 and a conversion price of $1.394. The terms of the Lucid Series A Preferred Stock also include a one times preference on liquidation and a right to receive dividends equal to 20% of the number of shares of Lucid common stock into which such Lucid Series A Preferred Stock is convertible, payable on the one-year and two-year anniversary of the issuance date. The Lucid Series A Preferred Stock is a non-voting security, other than with respect to limited matters related to changes in terms of the Lucid Series A Preferred Stock. The aggregate gross proceeds from the sale of shares in such offering were $13.625 million.

Lucid Diagnostics - Private Placement - Securities Purchase Agreement

Effective as of March 13, 2023, Lucid entered into a Securities Purchase Agreement ("Lucid SPA") with an accredited institutional investor ("Lucid Investor", "Lucid Lender", and/or "Lucid Holder"), pursuant to which Lucid agreed to sell, and the Lucid Investor agreed to purchase a Senior Secured Convertible Note with a face value principal of up to $11.1 million (the "March 2023 Lucid Senior Convertible Note"). The issuance of the March 2023 Lucid Senior Convertible Note is subject to customary closing conditions.

The March 2023 Lucid Senior Secured Convertible Note would have a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of Lucid's common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of the two-year anniversary of the date of issuance. The March 2023 Lucid Senior Convertible Note would be convertible into or otherwise paid in shares of Lucid's common stock.

Under the March 2023 Lucid Senior Convertible Note, Lucid is and would be subject to certain customary affirmative and negative covenants regarding the incurrence of indebtedness, the existence of liens, the repayment of indebtedness and the making of investments, the payment of cash in respect of dividends, distributions or redemptions, the transfer of assets, the maturity of other indebtedness, and transactions with affiliates, among other customary matters. Under the March 2023 Lucid Senior Convertible Note, Lucid would also be subject to financial covenants requiring that (i) the amount of Lucid's available cash equal or exceed $5.0 million at all times, (ii) the ratio of (a) the outstanding principal amount of the notes issued under the Lucid SPA, accrued and unpaid interest thereon and accrued and unpaid late charges to (b) Lucid's average market capitalization over the prior ten trading days, not exceed 30%, and (iii) that Lucid's market capitalization shall at no time be less than an amount to be agreed upon.

Liquidity and Capital Resources - continued

PAVmed Inc. ATM Facility

In December 2021, we entered into an "at-the-market offering" for up to $50 million of our common stock that may be offered and sold under a Controlled Equity Offering Agreement between us and Cantor Fitzgerald & Co. In the year ended December 31, 2022, the Company sold 106,225 shares through their at-the-market equity facility for approximately $79. Subsequent to December 31, 2022, through March 9, 2023, we sold 1,081,997 shares through their at-the-market equity facility for approximately $0.5 million.

Lucid Diagnostics Inc. - Committed Equity Facility and ATM Facility

In March 2022, our majority-owned subsidiary, Lucid Diagnostics, entered into a committed equity facility with Cantor. Under the terms of the committed equity facility, Cantor has committed to purchase up to $50 million of Lucid Diagnostics common stock from time to time at the request of Lucid Diagnostics. While there are distinct differences, the facility is structured similarly to a traditional at-the-market equity facility, insofar as it allows Lucid Diagnostics to raise primary equity capital on a periodic basis at prices based on the existing market price. As of December 31, 2022, under the committed equity facility, a total of 680,263 shares of common stock of Lucid Diagnostics were issued for proceeds of approximately $1.8 million.

In November 2022, Lucid Diagnostics also entered into an "at-the-market offering" for up to $6.5 million of its common stock that may be offered and sold under a Controlled Equity Offering Agreement between Lucid Diagnostics and Cantor Fitzgerald & Co. In the year ended December 31, 2022, there were no Lucid Diagnostics shares sold through their at-the-market equity facility. Subsequent to December 31, 2022, through March 9, 2023, Lucid Diagnostics sold 230,068 shares through its at-the-market equity facility for approximately $0.3 million.

Critical Accounting Policies and Significant Judgments and Estimates

The discussion and analysis of our financial condition and results of operations is based on 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 consolidated financial statements requires us to make estimates and assumptions affecting the reported amounts of assets, liabilities, and equity, along with the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of expenses during the corresponding periods. In accordance with U.S. GAAP, we base our estimates on historical experience and on various other assumptions we believe are reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions. While our significant accounting policies are described in more detail in our consolidated financial notes, we believe the following accounting policies to be critical to the judgments and estimates used in the preparation of our consolidated financial statements.

Research and Development Expenses

Research and development expenses are recognized as incurred and include the salary and stock-based compensation of employees engaged in product research and development activities, and the costs related to the Company's various contract research service providers, suppliers, engineering studies, supplies, and outsourced testing and consulting fees, as well as depreciation expense and rental costs for equipment used in research and development activities, and fees incurred for access to certain facilities of contract research service providers.

Fair Value Option ("FVO") Election

Under a Securities Purchase Agreement dated March 31, 2022, the Company issued a Senior Secured Convertible Note dated April 4, 2022, referred to herein as the "April 2022 Senior Convertible Note", and a Senior Secured Convertible Note dated September 8, 2022, referred to herein as the "September 2022 Senior Convertible Note", which are accounted under the "fair value option election" as discussed below.

Under Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 815, *Derivative and Hedging*, ("ASC 815"), a financial instrument containing embedded features and /or options may be required to be bifurcated from the financial instrument host and recognized as separate derivative asset or liability, with the bifurcated derivative asset or liability initially measured at estimated fair value as of the transaction issue date and then subsequently remeasured at estimated fair value as of each reporting period balance sheet date.

Alternatively, FASB ASC Topic 825, *Financial Instruments*, ("ASC 825") provides for the "fair value option" ("FVO") election. In this regard, ASC 825-10-15-4 provides for the FVO election (to the extent not otherwise prohibited by ASC 825-10-15-5) to be afforded to financial instruments, wherein the financial instrument is initially measured at estimated fair value as of the transaction issue date and then subsequently remeasured at estimated fair value as of each reporting period balance sheet date, with changes in the estimated fair value recognized as other income (expense) in the statement of operations. The estimated fair value adjustment of the April 2022 Senior Convertible Note is presented in a single line item within other income (expense) in the accompanying consolidated statement of operations (as provided for by ASC 825-10-50-30(b)). Further, as required by ASC 825-10-45-5, to the extent a portion of the fair value adjustment is attributed to a change in the instrument-specific credit risk, such portion would be recognized as a component of other comprehensive income ("OCI") (for which there was no such adjustment with respect to the April 2022 Senior Convertible Note or the September 2022 Senior Convertible Note).

See Note 13, *Financial Instruments Fair Value Measurements*, with respect to the FVO election; and Note 14, *Debt*, for a discussion of the April 2022 Senior Convertible Note and the September 2022 Senior Convertible Note.

Stock-Based Compensation

Stock-based awards are made to members of the board of directors of the Company, the Company's employees and non-employees, under each of the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan.

The Company accounts for stock-based compensation in accordance with the provisions of FASB ASC Topic 718, Stock Compensation ("ASC 718").

The grant-date estimated fair value of the stock-based award is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective stock-based award, with such straight-line recognition adjusted, as applicable, so the cumulative expense recognized is at-least equal-to-or-greater-than the estimated fair value of the vested portion of the respective stock-based award as of the reporting date.

The Company uses the Black-Scholes valuation model to estimate the fair value of stock options granted under both the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan, which requires the Company to make certain weighted-average valuation estimates and assumptions for stock-based awards, principally as follows:

- With respect to the PAVmed Inc. 2014 Equity Plan, the expected stock price volatility is based on the historical stock price volatility of PAVmed Inc. common stock and the volatilities of similar entities within the medical device industry over the period commensurate with the expected term with respect to stock options granted to the board of directors and employees in the years ended December 31, 2022 and 2021;

- With respect to stock options granted under the Lucid Diagnostics Inc. 2018 Equity Plan, the expected stock price volatility was based on the historical stock price volatility of similar entities within the medical device industry over the period commensurate with the expected term with respect to stock options granted to employees in the years ended December 31, 2022 and 2021;

- The risk-free interest rate is based on the interest rate payable on U.S. Treasury securities in effect at the time of grant for a period commensurate with either the expected term or the remaining contractual term, as applicable, of the stock option; and,

- The expected dividend yield is based on annual dividends of $0.00 as there have not been dividends paid to-date, and there is no plan to pay dividends for the foreseeable future.

The price per share of PAVmed Inc. common stock used in the computation of estimated fair value of stock options and restricted stock awards granted under the PAVmed Inc. 2014 Equity Plan is its quoted closing price per share.

On October 14, 2021, Lucid Diagnostics Inc. completed an initial public offering ("IPO") of its common stock under an effective registration statement on Form S-1 (SEC File No. 333-259721), wherein a total of 5.0 million IPO shares of common stock of Lucid Diagnostics Inc. were issued, with such total IPO shares inclusive of 571,428 shares issued to PAVmed Inc. The price per share of Lucid Diagnostics Inc. common stock used in the computation of estimated fair value of stock options and restricted stock awards granted under the Lucid Diagnostics Inc. 2018 Equity Plan is as follows: (i) for the period October 14, 2021 to December 31, 2022 it is its quoted closing price per share; and (ii) for the period January 1, 2021 to October 14, 2021, it was estimated using a probability-weighted average expected return methodology ("PWERM"), which involves the determination of equity value under various exit scenarios and an estimation of the return to the common stockholders under each scenario.

Recent Accounting Standards Updates Adopted

In August 2020, the FASB issued ASU 2020-06, Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815 – 40), ("ASU 2020-06"). ASU 2020-06 simplifies the accounting for certain financial instruments with characteristics of liabilities and equity, by eliminating the beneficial conversion and cash conversion accounting models previously contained in ASC 470-20 that required separate accounting for embedded conversion features. ASU 2020-06 also simplified the assessment of a financial instrument settlement to determine whether a contract is an entity's own equity qualifies for equity classification by removing certain conditions from ASC 815-4-25. The ASU 2020-06 amendments are effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. The Company's adoption of the ASU 2020-06 guidance as of January 1, 2021 did not have an effect on the Company's consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, "Income Taxes: Simplifying the Accounting for Income Taxes", ("ASU 2019-12"). The guidance of ASU 2019-12 removes certain exceptions for recognizing deferred taxes for investments, performing intra-period allocation, and calculating income taxes in interim periods, and adds revised guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. Adoption of the guidance of ASU 2019-12 is required for annual and interim financial statements beginning after December 15, 2020. The Company's adoption of the ASU 2019-12 guidance as of January 1, 2021 did not have an effect on the Company's consolidated financial statements.

Effective December 31, 2021, the Company adopted FASB ASC Topic 842, Leases, ("ASC 842"). ASC 842 established a right-of-use ("ROU") model requiring a lessee to recognize a ROU asset and a lease liability for all leases with terms greater-than 12 months. Leases are classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The Company's adoption of ASC 842 did not have an effect on the Company's consolidated financial statements. See Note 9, *Leases*.

Off-Balance sheet arrangements

We do not have any off-balance sheet arrangements.

Item 7A. Quantitative and Qualitative Disclosure About Market Risk

Not applicable.

Item 8. Financial Statements and Supplementary Data

Our consolidated financial statements, together with the report of our independent registered public accounting firm, appear herein commencing on page F-1 of this Annual Report on Form 10-K and are incorporated herein by reference.

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

Our management, with the participation of our principal executive officer and our principal financial officer, evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2022. Based on such evaluation, our principal executive officer and principal financial officer concluded our disclosure controls and procedures (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) were effective as of such date to provide reasonable assurance the information required to be disclosed by us in the reports we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as such term is defined in Exchange Act Rules 13(a)-15(f). Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the U.S.

Our internal control over financial reporting includes those policies and procedures that:

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

Due to its inherent limitations, a system of internal control over financial reporting can provide only reasonable assurance and may not prevent or detect all misstatements. Further, because of changes in conditions, effectiveness of internal controls over financial reporting may vary over time. Our system contains self-monitoring mechanisms, so actions will be taken to correct deficiencies as they are identified.

Our management conducted an evaluation of the effectiveness of the system of internal control over financial reporting based on the framework in Internal Control-Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded our system of internal control over financial reporting was effective as of December 31, 2022.

This Form 10-K does not include an attestation report of our independent registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to the rules of the SEC to permit us to provide only management's report in this Form 10-K.

Changes to Internal Controls Over Financial Reporting

There has been no change in our internal controls over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the quarter ended December 31, 2022 that has materially affected, or is reasonably likely to materially affect, our internal controls over financial reporting.

Item 9B. Other Information

None.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information required by this Item 10 is incorporated by reference to our Proxy Statement for our 2023 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2022.

Item 11. Executive Compensation

The information required by this Item 11 is incorporated by reference to our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2022.

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

The information required by this Item 12 is incorporated by reference to our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2022.

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

The information required by this Item 13 is incorporated by reference to our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2022.

Item 14. Principal Accounting Fees and Services

The information required by this Item 14 is incorporated by reference to our Proxy Statement for the 2023 Annual Meeting of Stockholders to be filed with the Securities and Exchange Commission within 120 days of the fiscal year ended December 31, 2022.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents filed as a part of the report:

(1) The following financial statements:

Report of Independent Registered Public Accounting Firm (PCAOB ID#688)
Consolidated Balance Sheets
Consolidated Statements of Operations
Consolidated Statements of Changes in Stockholders' Equity (Deficit)
Consolidated Statements of Cash Flows
Notes to Consolidated Financial Statements

(2) The financial statement schedules:

Schedules other than those listed above are omitted for the reason they are not required or are not applicable, or the required information is shown in the financial statements or notes thereto. Columns omitted from schedules filed have been omitted because the information is not applicable.

(3) The following exhibits:

		Incorporation by Reference		
Exhibit No.	**Description**	**Form**	**Exhibit No.**	**Date**
2.1	Asset Purchase Agreement, dated as of February 25, 2022, by and among LucidDx Labs Inc., Lucid Diagnostics Inc. and ResearchDx, Inc.	8-K (LUCD)	2.1	3/3/22
3.1.1	Certificate of Incorporation	S-1	3.1	4/22/15
3.1.2	Certificate of Amendment to Certificate of Incorporation	S-1	3.2	4/22/15
3.1.3	Certificate of Amendment to Certificate of Incorporation, dated October 1, 2018	8-K	3.1	10/2/18
3.1.4	Certificate of Amendment to Certificate of Incorporation, dated June 26, 2019	8-K	3.1	6/27/19
3.1.5	Certificate of Amendment to Certificate of Incorporation, dated July 24, 2020	8-K	3.1	7/27/20
3.1.6	Certificate of Amendment to Certificate of Incorporation, dated June 21, 2022	8-K	3.1	6/22/22
3.1.7	Form of Certificate of Designation of Preferences, Rights and Limitations of Series B Convertible Preferred Stock	8-K/A	3.1	4/20/18
3.2	Amended and Restated Bylaws	8-K	3.1	1/15/21
4.1	Description of Registrant's Securities	†		
4.2	Specimen Common Stock Certificate	S-1/A	4.2	9/29/15
4.6	Specimen Series Z Warrant Certificate	8-K	4.1	4/5/18
4.7	Amended and Restated Series Z Warrant Agreement, dated as of June 8, 2018, by and between PAVmed Inc. and Continental Stock Transfer & Trust Company, as Warrant Agent	8-K	10.1	6/8/18
4.8	Form of PAVmed Inc. Senior Secured Convertible Note	8-K	4.1	4/4/22
10.1	Patent Option Agreement	S-1	10.1	4/22/15
10.2.1	Form of Letter Agreement with HCFP Capital Partners III LLC	S-1	10.4.1	4/22/15
10.2.2	Form of Letter Agreement with Pavilion Venture Partners LLC	S-1	10.4.2	4/22/15
10.3.1	Letter agreement regarding corporate opportunities executed by Lishan Aklog, M.D.	S-1	10.5.1	4/22/15
10.3.2	Letter agreement regarding corporate opportunities executed by Michael Glennon	S-1	10.5.2	4/22/15
10.3.3	Letter agreement regarding corporate opportunities executed by Brian deGuzman, M.D.	S-1	10.5.3	4/22/15

10.4*	Amended and Restated Employment Agreement between PAVmed Inc. and Lishan Aklog, M.D.	8-K	10.1	3/20/19
10.5*	Amended and Restated Employment Agreement between PAVmed Inc. and Dennis M. McGrath	8-K	10.2	3/20/19
10.6*	Employment Agreement between PAVmed Inc. and Brian J. deGuzman, M.D.	8-K	10.1	7/19/16
10.7	PAVmed Inc. Fifth Amended and Restated 2014 Long-Term Incentive Equity Plan	DEF 14A	Annex A	4/30/21
10.8	PAVmed Inc. Employee Stock Purchase Plan	DEF 14A	Annex B	4/30/21
10.9*	Employment Agreement between PAVmed Inc. and Michael A. Gordon	†		
10.10*	Employment Agreement between PAVmed Inc. and Shaun M. O'Neil	8-K	10.1	2/24/22
10.11	Amended and Restated License Agreement, dated as of August 23, 2021, by and between Case Western Reserve University and Lucid Diagnostics Inc.	S-1/A (LUCD)	10.2	10/1/21
10.12	Form of Stock Option Agreement	†		
10.13	Form of Indemnification Agreement	†		
10.14.1	Management Services Agreement, dated as of February 25, 2022, by and between LucidDx Labs Inc. and ResearchDx, Inc.	8-K (LUCD)	10.1	3/3/22
10.14.2	Termination Agreement, dated as of February 10, 2023, by and among Lucid Diagnostics Inc., LucidDx Labs Inc. and ResearchDx, Inc.	†		
10.15	Controlled Equity Offering℠, dated as of December 21, 2021, by and between Cantor Fitzgerald & Co. and PAVmed Inc.	S-3	1.2	12/21/21
10.16.1	Form of Securities Purchase Agreement	8-K	10.1	4/4/22
10.16.2	Form of Security Agreement	8-K	10.2	4/4/22
10.16.3	Form of Voting Agreement	8-K	10.3	4/4/22
10.17.1	Common Stock Purchase Agreement, dated as of March 28, 2022, by and between CF Principal Investments LLC and Lucid Diagnostics Inc.	8-K (LUCD)	10.1	4/1/22
10.17.2	Registration Rights Agreement, dated as of March 28, 2022, by and between CF Principal Investments LLC and Lucid Diagnostics Inc.	8-K (LUCD)	10.2	4/1/22
10.18	Controlled Equity Offering℠, dated as of November 23, 2022, by and between Cantor Fitzgerald & Co. and Lucid Diagnostics Inc.	8-K (LUCD)	1.2	11/25/22
14.1	Form of Code of Ethics	†		
21.1	List of Subsidiaries †	†		
23.1	Consent of Marcum LLP †	†		
31.1	Certification of Principal Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.†	†		
31.2	Certification of Principal Financial and Accounting Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. †	†		
32.1	Certification of Principal Executive Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. †	†		
32.2	Certification of Principal Financial and Accounting Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. †	†		
101.INS	Inline XBRL Instance Document	†		
101.SCH	Inline XBRL Taxonomy Extension Schema	†		
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase	†		
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase	†		
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase	†		
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase	†		
104	Cover Page Interactive Data File (embedded within the Inline XBRL document)			

*	Management contract or compensatory plan or arrangement.
†	Filed herewith
LUCD	Lucid Diagnostics Inc.

Item 16. Form 10-K Summary

None

SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned hereunto duly authorized.

PAVmed Inc.

March 13, 2023

By: */s/ Dennis M McGrath*
Dennis M McGrath
President
Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, the report has been signed by the following persons on behalf of the Registrant and in the capacities and on the dates indicated. Each person whose signature appears below hereby authorizes both Lishan Aklog, M.D. and Dennis M. McGrath or either of them acting in the absence of the others, as his or her true and lawful attorney-in-fact and agent, with full power of substitution and re-substitution 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 report, and to file the same, with all exhibits thereto and other documents in connection therewith, with the United States Securities and Exchange Commission.

Signature	Title	Date
/s/ Lishan Aklog, M.D. Lishan Aklog, M.D.	Chairman of the Board of Directors Chief Executive Officer *(Principal Executive Officer)*	March 13, 2023
/s/ Dennis M. McGrath Dennis M. McGrath	President Chief Financial Officer *(Principal Financial and Accounting Officer)*	March 13, 2023
/s/ Michael J. Glennon Michael J. Glennon	Vice Chairman Director	March 13, 2023
/s/ Debra J. White Debra J. White	Director	March 13, 2023
/s/ James L. Cox, M.D. James L. Cox, M.D.	Director	March 13, 2023
/s/ Ronald M. Sparks Ronald M. Sparks	Director	March 13, 2023
/s/ Timothy Baxter Timothy Baxter	Director	March 13, 2023
/s/ Joan Harvey Joan Harvey	Director	March 13, 2023

PAVMED INC.
and SUBSIDIARIES
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and Board of Directors of
PAVmed Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of PAVmed Inc. and Subsidiaries (the "Company") as of December 31, 2022 and 2021, the related consolidated statements of operations, changes in equity (deficit) and cash flows for each of the two years in the period ended December 31, 2022, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2022 and 2021, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2022, in conformity with accounting principles generally accepted in the United States of America.

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 Public Company Accounting Oversight Board (United States) ("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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

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 Matters

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) relate to accounts or disclosures that are material to the financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing separate opinions on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Convertible Notes

Critical Audit Matter Description

As described in Note 14 to the consolidated financial statements, the Company issued $38.75 million in aggregate principal of Senior Secured Convertible Notes pursuant to a Securities Purchase Agreement dated March 31, 2022. The Senior Secured Convertible Notes contain conversion and redemption features. The Company elected to account for the Senior Secured Convertible Notes under the fair value option in accordance with ASC 825. The fair value of the Senior Secured Convertible Notes was $33.65 million as of December 31, 2022.

We identified the valuation of convertible notes as a critical audit matter as auditing the Company's fair value of the Senior Secured Convertible Notes was complex and involved a high degree of subjectivity because the Company used a complex valuation methodology that incorporated significant management assumptions including debt yield and implied volatility. Also, this matter caused us to use increased effort including involvement of professionals with specialized skill and knowledge.

How the Critical Audit Matter Was Addressed in the Audit

Our audit procedures related to the valuation of convertible notes included the following, among others:

- We obtained an understanding of the design of the Company's controls over the valuation of the convertible notes, including controls over management's review of the valuation model and the significant assumptions used in determining the fair value of the convertible notes.
- With assistance of our valuation specialists, we audited the fair value of the Senior Secured Convertible Notes, valuation methodology and key assumptions used in determining the fair value of the Senior Secured Convertible Notes by:
    a. Evaluating the appropriateness of the valuation model and techniques used in determining the fair value;
    b. Assessing whether significant valuation assumption inputs, including debt yield and implied volatility are consistent with those that would be used by market participants through the testing of source information, checking the mathematical accuracy of the calculation, and developing independent estimates and comparing to those selected by management, where applicable; and
    c. Recalculating the fair value that management arrived to verify it was reasonable.
- We tested the completeness and accuracy of the underlying data supporting the significant assumptions and estimates.

/s/ Marcum LLP

Marcum LLP

We have served as the Company's auditor since 2019.

New York, NY
March 13, 2023

PAVMED INC.
and SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS
(in thousands except number of shares and per share data)

	December 31, 2022	December 31, 2021
Assets:		
Current assets:		
Cash	$ 39,744	$ 77,258
Accounts receivable	17	200
Prepaid expenses, deposits, and other current assets	4,165	5,179
Total current assets	43,926	82,637
Fixed assets, net	2,451	1,585
Operating lease right-of-use assets	3,037	—
Intangible assets, net	3,445	2,029
Other assets	1,121	725
Total assets	$ 53,980	$ 86,976
Liabilities, Preferred Stock and Stockholders' Equity		
Current liabilities:		
Accounts payable	$ 2,704	$ 3,299
Accrued expenses and other current liabilities	3,705	4,259
Operating lease liabilities, current portion	1,141	—
Senior Secured Convertible Notes - at fair value	33,650	—
Total current liabilities	41,200	7,558
Operating lease liabilities, less current portion	1,846	—
Total liabilities	43,046	7,558
Commitments and contingencies (Note 12)		
Stockholders' Equity:		
Preferred stock, $0.001 par value. Authorized, 20,000,000 shares; Series B Convertible Preferred Stock, par value $0.001, issued and outstanding 1,205,759 at December 31, 2022 and 1,113,919 shares at December 31, 2021	2,695	2,419
Common stock, $0.001 par value. Authorized, 250,000,000 shares; 94,510,537 and 86,367,845 shares outstanding as of December 31, 2022 and December 31, 2021, respectively	95	86
Additional paid-in capital	216,106	198,071
Accumulated deficit	(228,169)	(138,910)
Treasury stock	(408)	—
Total PAVmed Inc. Stockholders' Equity	(9,681)	61,666
Noncontrolling interests	20,615	17,752
Total Stockholders' Equity	10,934	79,418
Total Liabilities and Stockholders' Equity	$ 53,980	$ 86,976

See accompanying notes to the consolidated financial statements.

PAVMED INC.
and SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands except number of shares and per share data)

	Years Ended December 31,	
	2022	**2021**
Revenue	$ 377	$ 500
Operating expenses:		
Cost of revenue	3,614	585
Sales and marketing	19,318	8,895
General and administrative	41,041	25,420
Amortization of acquired intangible assets	1,784	146
Research and development	25,547	19,847
Total operating expenses	91,304	54,893
Net loss from operations	(90,927)	(54,393)
Other income (expense):		
Interest expense	(1,272)	—
Change in fair value - Senior Secured Convertible Notes and Senior Convertible Note	(1,273)	1,682
Loss on issue and offering costs - Senior Secured Convertible Note	(4,332)	—
Debt extinguishments loss - Senior Secured Convertible Notes	(5,434)	(3,715)
Debt forgiveness	—	300
Other income (expense), net	(12,311)	(1,733)
Loss before provision for income tax	(103,238)	(56,126)
Provision for income taxes	—	—
Net loss before noncontrolling interests	(103,238)	(56,126)
Net loss attributable to the noncontrolling interests	14,255	5,779
Net loss attributable to PAVmed Inc.	(88,983)	(50,347)
Less: Series B Convertible Preferred Stock dividends earned	(281)	(283)
Net loss attributable to PAVmed Inc. common stockholders	$ (89,264)	$ (50,630)
Per share information:		
Net loss per share attributable to PAVmed Inc. - basic and diluted	$ (1.00)	$ (0.65)
Net loss per share attributable to PAVmed Inc. common stockholders – basic and diluted	$ (1.00)	$ (0.65)
Weighted average common shares outstanding, basic and diluted	89,076,078	77,515,767

See accompanying notes to the consolidated financial statements.

PAVMED INC.
and SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (DEFICIT)
for the YEAR ENDED December 31, 2022
(in thousands, except number of shares and per share data)

	PAVmed Inc. Stockholders' Equity (Deficit)								
	Series B Convertible Preferred Stock		Common Stock		Additional Paid-In	Accumulated	Treasury	Non controlling	
	Shares	Amount	Shares	Amount	Capital	Deficit	Stock	Interest	Total
Balance - December 31, 2021	1,113,919	$ 2,419	86,367,845	$ 86	$ 198,071	$ (138,910)	$ —	$ 17,752	$ 79,418
Dividends declared - Series B Convertible Preferred Stock	91,885	276	—	—	—	(276)	—	—	—
Conversions - Series B Convertible Preferred Stock	(45)	—	45	—	—	—	—	—	—
Issue common stock - PAVM ATM Facility	—	—	106,225	1	78	—	—	—	79
Vest - restricted stock awards	—	—	541,666	1	(1)	—	—	—	—
Exercise - Series Z warrants	—	—	5	—	—	—	—	—	—
Conversions - Senior Secured Convertible Note	—	—	7,189,358	7	11,800	—	—	—	11,807
Exercise - stock options	—	—	299,999	—	302	—	—	—	302
Exercise - stock options of majority-owned subsidiary	—	—	—	—	—	—	—	695	695
Purchase - Employee Stock Purchase Plan	—	—	194,240	—	218	—	140	—	358
Purchase - majority-owned subsidiary common stock - Employee Stock Purchase Plan	—	—	—	—	—	—	—	109	109
Issuance - majority-owned subsidiary common stock - Committed Equity Facility, net of financing charges	—	—	—	—	—	—	—	1,767	1,767
Impact of subsidiary equity transactions	—	—	—	—	(28)	—	—	28	—
Issuance - majority-owned subsidiary common stock - Settlement APA-RDx - Installment Payment	—	—	—	—	—	—	—	653	653
Stock-based compensation - PAVmed Inc.	—	—	—	—	5,666	—	—	—	5,666
Stock-based compensation - majority-owned subsidiaries	—	—	—	—	—	—	—	13,866	13,866
Treasury stock	—	—	(188,846)	—	—	—	(548)	—	(548)
Net loss	—	—	—	—	—	(88,983)	—	(14,255)	(103,238)
Balance - December 31, 2022	1,205,759	$ 2,695	94,510,537	$ 95	$ 216,106	$ (228,169)	$ (408)	$ 20,615	$ 10,934

See accompanying notes to the consolidated financial statements.

PAVMED INC.
and SUBSIDIARIES
CONSOLIDATED STATEMENT OF CHANGES IN EQUITY (DEFICIT)
for the YEAR ENDED December 31, 2021
(in thousands, except number of shares and per share data)

	PAVmed Inc. Stockholders' Equity (Deficit)							
	Series B Convertible Preferred Stock		Common Stock		Additional Paid-In	Accumulated	Non controlling	
	Shares	Amount	Shares	Amount	Capital	Deficit	Interest	Total
Balance - December 31, 2020	1,228,075	$ 2,537	63,819,935	$ 64	$ 87,570	$ (88,275)	$ (2,369)	$ (473)
Dividends declared - Series B Convertible Preferred Stock	96,292	288	—	—	—	(288)	—	—
Conversions - Series B Convertible Preferred Stock	(210,448)	(406)	210,448	—	406	—	—	—
Issue common stock – registered offerings, net	—	—	15,782,609	16	53,688	—	—	53,704
Vest - restricted stock awards	—	—	150,000	—	—	—	—	—
Exercise - Series Z warrants	—	—	4,877,484	5	7,799	—	—	7,804
Exercise - Series W warrants	—	—	3,945	—	20	—	—	20
Conversions - Senior Secured Convertible Note	—	—	667,668	1	1,722	—	—	1,723
Exercise - stock options	—	—	621,164	—	979	—	—	979
Purchase - Employee Stock Purchase Plan	—	—	234,592	—	436	—	—	436
Impact of subsidiary equity transactions	—	—	—	—	39,576	—	16,760	56,336
Stock-based compensation - PAVmed Inc.	—	—	—	—	5,410	—	—	5,410
Stock-based compensation - majority-owned subsidiary	—	—	—	—	465	—	9,134	9,599
Investment in Veris Health Inc. subsidiary	—	—	—	—	—	—	6	6
Net Loss	—	—	—	—	—	(50,347)	(5,779)	(56,126)
Balance - December 31, 2021	1,113,919	$ 2,419	86,367,845	$ 86	$ 198,071	$ (138,910)	$ 17,752	$ 79,418

See accompanying notes to the consolidated financial statements.

PAVMED INC.
and SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands, except number of shares and per share data)

	Year Ended December 31,	
	2022	**2021**
Cash flows from operating activities		
Net loss - before noncontrolling interest ("NCI")	$ (103,238)	$ (56,126)
Adjustments to reconcile net loss - before NCI to net cash used in operating activities		
Depreciation and amortization expense	2,457	226
Stock-based compensation	19,532	15,009
In-process R&D charge	—	133
APA-RDx: Issue common stock of majority-owned subsidiary - settle installment payment	653	—
Change in fair value - Senior Secured Convertible Note	1,273	(1,682)
Loss upon Issuance - Senior Secured Convertible Note	3,523	—
Debt extinguishment loss - Senior Secured Convertible Notes and Senior Convertible Note	5,434	3,715
Debt forgiveness	—	(300)
Non-cash lease expense	97	—
Changes in operating assets and liabilities:		
Accounts receivable	183	(200)
Prepaid expenses, deposits and current and other assets	397	(3,458)
Accounts payable	(742)	174
Accrued expenses and other current liabilities	(554)	1,918
Net cash flows used in operating activities	(70,985)	(40,591)
Cash flows from investing activities		
Purchase of equipment	(1,540)	(1,469)
Asset acquisitions, net of cash	(3,200)	(2,247)
Net cash flows used in investing activities	(4,740)	(3,716)
Cash flows from financing activities		
Proceeds – issue of common stock - initial public offering - majority-owned subsidiary	—	62,000
Payment – offering costs - initial public offering - majority-owned subsidiary common stock	—	(5,665)
Proceeds – issue of common stock – registered offerings	—	55,016
Payment – offering costs – registered offerings	—	(1,312)
Proceeds – issue of Senior Secured Convertible Note, net of offering costs	35,227	—
Payment – repayment of Senior Convertible Note and Senior Secured Convertible Note	—	(14,816)
Payment – Senior Convertible Note and Senior Secured Convertible Note – non-installment payments	—	(154)
Proceeds – issue of common stock - At-The-Market Facility	79	—
Proceeds – majority-owned subsidiary common stock - Committed Equity Facility	1,807	—
Proceeds – exercise of Series Z warrants	—	7,804
Proceeds – exercise of Series W warrants	—	20
Proceeds – exercise of stock options	302	980
Proceeds – issue common stock – Employee Stock Purchase Plan	358	436
Proceeds – majority-owned subsidiary common stock – Employee Stock Purchase Plan	109	—
Proceeds – exercise of stock options issued under equity plan of majority owned subsidiary	695	—
Purchase Treasury Stock – payment of employee payroll tax obligation in connection with stock-based compensation	(366)	—
Net cash flows provided by financing activities	38,211	104,309
Net increase (decrease) in cash	(37,514)	60,002
Cash, beginning of period	77,258	17,256
Cash, end of period	$ 39,744	$ 77,258

See accompanying notes to the consolidated financial statements.

Note 1 — The Company

Description of the Business

PAVmed Inc and Subsidiaries, referred to herein as "PAVmed" or the "Company," is comprised of PAVmed Inc. and its wholly-owned subsidiary and its majority-owned subsidiaries, inclusive of Lucid Diagnostics Inc. ("Lucid Diagnostics" or "LUCID") and Veris Health Inc. ("Veris Health" or "VERIS").

PAVmed is a highly differentiated, multi-product, commercial-stage medical technology company organized to advance a broad pipeline of innovative medical technologies from concept to commercialization, employing a business model focused on capital efficiency and speed to market.

Our current central focus is predominantly on commercial expansion and execution including the acceleration of EsoGuard and Veris Cancer Care Platform commercialization. As resources permit, we will continue to explore internal and external innovations that fulfill our project selection criteria without limiting ourselves to any target specialty or condition. More broadly, we strive to maintain balance within our pipeline with shorter-term, lower-risk projects with the prospect for rapid commercialization and revenue generation supporting development of longer-term projects. At the same time, we are continuously re-assessing each project's long-term commercial potential relative to other projects in our pipeline, accelerating or decelerating the project and reallocating resources accordingly.

The Company operates in one segment as a medical technology company, with the following lines of business: Diagnostics, Medical Devices and Digital Health. Above in *Part I, Item 1 - Business* is a summary of each of our key products within these sectors, including in particular EsoGuard and the Veris Cancer Care Platform, currently our two leading products. We are also pursuing a number of research and development project and product opportunities across these three lines of business, which have either been developed internally or have been presented to us by clinician innovators and academic medical institutions for consideration.

Note 2 — Summary of Significant Accounting Policies

Significant Accounting Policies

Basis of Presentation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"), and applicable rules and regulations of the United States Securities and Exchange Commission ("SEC"), and include the accounts of the Company and its wholly-owned and majority-owned subsidiaries. All significant intercompany transactions and balances have been eliminated in consolidation. The Company holds a majority-ownership interest and has controlling financial interest in each of: Lucid Diagnostics Inc. and Veris Health Inc., with the corresponding noncontrolling interest included as a separate component of consolidated stockholders' equity (deficit), including the recognition in the consolidated statement of operations of a net loss attributable to the noncontrolling interest based on the respective minority-interest equity ownership of each majority-owned subsidiary. See Note 18, *Noncontrolling Interest*, for a discussion of each of the majority-owned subsidiaries noted above. The Company manages its operations as a single operating segment for the purposes of assessing performance and making operating decisions.

All amounts in the accompanying consolidated financial statements and these notes thereto are presented in thousands of dollars, if not otherwise noted as being presented in millions of dollars, except for shares and per share amounts.

Use of Estimates

In preparing the consolidated financial statements in conformity with U.S. GAAP, management is required to make estimates and assumptions that affect the reported amounts of assets, inclusive of acquired intangible assets and the determination of corresponding carrying value reserve, if any, and liabilities and the disclosure of contingent losses, as of the date of the consolidated financial statements, as well as the reported amounts of revenue and expenses during the reporting period. Significant estimates in these consolidated financial statements include those related to the estimated fair value of stock-based equity awards, intangible assets, financial instruments recognized as liabilities, debt obligations, and common stock purchase warrants. Other significant estimates include the estimated incremental borrowing rate, the provision or benefit for income taxes and the corresponding valuation allowance on deferred tax assets. Additionally, management's assessment of the Company's ability to continue as a going concern involves the estimation of the amount and timing of future cash inflows and outflows. On an ongoing basis, the Company evaluates its estimates and assumptions. The Company bases its estimates on historical experience and on various other assumptions believed to be reasonable. Due to inherent uncertainty involved in making estimates, actual results reported in future periods may be affected by changes in these estimates.

Note 2 — Summary of Significant Accounting Policies - continued

Financial Condition

The provisions of Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 205-40, Presentation of Financial Statements - Going Concern ("ASC 205-40") requires management to assess an entity's ability to continue as a going concern within one year of the date of the financial statements are issued. In each reporting period, including interim periods, an entity is required to assess conditions known and reasonably knowable as of the financial statement issuance date to determine whether it is probable an entity will not meet its financial obligations within one year from the financial statement issuance date. Substantial doubt about an entity's ability to continue as a going concern exists when conditions and events, considered in the aggregate, indicate it is probable the entity will be unable to meet its financial obligations as they become due within one year after the date the financial statements are issued.

The Company has financed its operations principally through public and private issuances of its common stock, preferred stock, common stock purchase warrants, and debt. The Company is subject to all of the risks and uncertainties typically faced by medical device and diagnostic companies that devote substantially all of their efforts to the commercialization of their initial product and services and ongoing research and development activities and conducting clinical trials. The Company expects to continue to experience recurring losses from operations and will continue to fund its operations with debt and equity financing transactions. Notwithstanding, however, with the cash on-hand as of the date hereof and other debt and equity committed sources of financing, the Company expects to be able to fund its operations for one year from the date of the issue of the Company's consolidated financial statements included herein in the Company's Annual Report on Form 10-K for the year ended December 31, 2022.

Cash

The Company maintains its cash at a major financial institution with high credit quality. At times, the balance of its cash deposits may exceed federally insured limits. The Company has not experienced losses on deposits with commercial banks and financial institutions which exceed federally insured limits.

Offering Costs

Offering costs consist of certain legal, accounting, and other advisory fees incurred related to the Company's efforts to raise debt and equity capital. Offering costs in connection with equity financing are recognized as either an offset against the financing proceeds to extent the underlying security is equity classified or a current period expense to extent the underlying security is liability classified or for which the fair value option is elected. Offering costs, lender fees, and warrants issued in connection with debt financing, to the extent the fair value option is not elected, are recognized as debt discount, which reduces the reported carrying value of the debt, with the debt discount amortized as interest expense, generally over the contractual term of the debt agreement, to result in a constant rate of interest. Offering costs associated with in-process capital financing are accounted for as deferred offering costs.

Revenue Recognition

Revenues are recognized when the satisfaction of the performance obligation occurs, in an amount that reflects the consideration the Company expects to collect in exchange for those services. The Company's revenue is primarily generated by its laboratory testing services utilizing its EsoGuard Esophageal DNA tests. The services are completed upon release of a patient's test result to the ordering healthcare provider. Revenue recognized is inclusive of both variable consideration in connection with an individual patient's third-party insurance coverage policy and fixed consideration in connection with a contracted services arrangement with an unrelated third party legal entity. To determine revenue recognition for the arrangements that the Company determines are within the scope of ASC 606, Revenue from Contracts with Customers, the Company performs the following five steps: (1) identify the contract(s) with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract and (5) recognize revenue when (or as) the entity satisfies a performance obligation.

The key aspects considered by the Company include the following:

Contracts—The Company's customer is primarily the patient, but the Company does not enter into a formal reimbursement contract with a patient. The Company establishes a contract with a patient in accordance with other customary business practices, which is the point in time an order is received from a provider and a patient specimen has been returned to the laboratory for testing. Payment terms are a function of a patient's existing insurance benefits, including the impact of coverage decisions with Center for Medicare & Medicaid Services ("CMS") and applicable reimbursement contracts established between the Company and payers. However, when a patient is considered self-pay, the Company requires payment from the patient prior to the commencement of the Company's performance obligations. The Company's consideration can be deemed variable or fixed depending on the structure of specific payer contracts, and the Company considers collection of such consideration to be probable to the extent that it is unconstrained.

Performance obligations—A performance obligation is a promise in a contract to transfer a distinct good or service (or a bundle of goods or services) to the customer. The Company's contracts have a single performance obligation, which is satisfied upon rendering of services, which culminates in the release of a patient's test result to the ordering healthcare provider. The Company elects the practical expedient related to the disclosure of unsatisfied performance obligations, as the duration of time between providing testing supplies, the receipt of a sample, and the release of a test result to the ordering healthcare provider is far less than one year.

Transaction price—The transaction price is the amount of consideration that the Company expects to collect in exchange for transferring promised goods or services to a customer, excluding amounts collected on behalf of third parties (for example, some sales taxes). The consideration expected to be collected from a contract with a customer may include fixed amounts, variable amounts, or both.

If the consideration derived from the contracts is deemed to be variable, the Company estimates the amount of consideration to which it will be entitled in exchange for the promised goods or services. The Company limits the amount of variable consideration included in the transaction price to the unconstrained portion of such consideration. In other words, the Company recognizes revenue up to the amount of variable consideration that is not subject to a significant reversal until additional information is obtained or the uncertainty associated with the additional payments or refunds is subsequently resolved.

Note 2 — Summary of Significant Accounting Policies - continued

When the Company does not have significant historical experience or that experience has limited predictive value, the constraint over estimates of variable consideration may result in no revenue being recognized upon delivery of patient EsoGuard test results to the ordering healthcare provider. As such, the Company recognizes revenue up to the amount of variable consideration not subject to a significant reversal until additional information is obtained or the uncertainty associated with additional payments or refunds, if any, is subsequently resolved. Differences between original estimates and subsequent revisions, including final settlements, represent changes in estimated expected variable consideration, with the change in estimate recognized in the period of such revised estimate. With respect to a contracted service arrangement, the fixed consideration revenue is recognized on an as-billed basis upon delivery of the laboratory test report with realization of such fixed consideration deemed probable based upon actual historical experience.

Allocate transaction price—The transaction price is allocated entirely to the performance obligation contained within the contract with a customer on the basis of the relative standalone selling prices of each distinct good or service.

Practical Expedients—The Company does not adjust the transaction price for the effects of a significant financing component, as at contract inception, the Company expects the collection cycle to be one year or less.

Fixed Assets

Fixed assets are stated at cost and depreciated using the straight-line method over the assets' estimated useful lives. Additions and improvements are capitalized, including direct and indirect costs incurred to validate equipment and bring to working conditions. The costs for maintenance and repairs are expensed as incurred.

Leases

The Company adopted FASB ASC Topic 842, *Leases*, ("ASC 842") effective December 31, 2021. All significant lease agreements and contractual agreements with embedded lease agreements are accounted for under the provisions of ASC 842, wherein, if the contractual arrangement: involves the use of a distinct identified asset; provides for the right to substantially all the economic benefits from the use of the asset throughout the contractual period; and provides for the right to direct the use of the asset. A lease agreement is accounted for as either a finance lease (generally with respect real estate) or an operating lease (generally with respect to equipment). Under both a finance lease and an operating lease, the Company recognizes as of the lease commencement date a lease right-of-use ("ROU") asset and a corresponding lease payment liability.

A lease ROU asset represents the Company's right to use an underlying asset for the lease term, and the lease liability represents its contractual obligation to make lease payments. The lease ROU asset is measured at the lease commencement date as the present value of the future lease payments plus initial direct costs incurred. The Company recognizes lease expense of the amortization of the lease ROU asset for an operating lease on a straight-line basis over the lease term; and for financing leases on a straight-line basis unless another basis is more representative of the pattern of economic benefit. The operating ROU asset also includes any lease incentives received for improvements to leased property, when the improvements are lessee-owned. For improvements to leased property that are lessor-owned, the Company includes amounts the Company incurred for the improvements as ROU assets which are amortized on a straight-line basis over the life of the lease.

The lease liability is measured at the lease commencement date with the discount rate generally based on the Company's incremental borrowing rate (to the extent the lease implicit rate is not known nor determinable), with interest expense recognized using the interest method for financing leases.

Certain leases may include options to extend or terminate the agreement. The Company does not assume renewals in determination of the lease term unless the renewals are deemed to be reasonably certain at lease commencement. As well, an option to terminate is considered unless it is reasonably certain the Company will not exercise the option. The Company elected the practical expedient to not recognize a lease ROU asset and lease payment liability for leases with a term of twelve months or less ("short-term leases"), resulting in the aggregate lease payments being recognized on a straight line basis over the lease term. The Company's leases with a commencement date prior to January 1, 2022 were short-term leases and therefore did not require recording a ROU asset or lease liability at December 31, 2021. Additionally, the Company elected the practical expedient to not separate lease and non-lease components.

Intangible Assets

Purchased intangible assets are recorded at cost and depreciated using the straight-line method over the assets' estimated useful life. See Note 10, *Intangible Assets, net*, for further information with respect to purchased intangible assets.

Impairment - Long Lived Assets

The Company reviews its long-lived assets, including intangible assets with finite lives, for recoverability whenever events or changes in circumstances indicate the carrying amount of the assets may not be fully recoverable. The Company evaluates assets for potential impairment by comparing estimated future undiscounted net cash flows to the carrying amount of the asset. If the carrying amount of the assets exceeds the estimated future undiscounted cash flows, impairment is measured based on the difference between the carrying amount of the assets and fair value which is generally an expected present value cash flow technique. The assessment and determination of the existence of an impairment indicator comprises measurable operating performance criteria as well as qualitative factors deemed relevant and appropriate to such evaluation.

Note 2 — Summary of Significant Accounting Policies - continued

Stock-Based Compensation

Stock-based awards are made to members of the board of directors of the Company, the Company's employees and non-employees, under each of the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan.

The Company accounts for stock-based compensation in accordance with the provisions of FASB ASC Topic 718, Stock Compensation ("ASC 718").

The grant-date estimated fair value of the stock-based award is recognized on a straight-line basis over the requisite service period, which is generally the vesting period of the respective stock-based award, with such straight-line recognition adjusted, as applicable, so the cumulative expense recognized is at-least equal-to-or-greater-than the estimated fair value of the vested portion of the respective stock-based award as of the reporting date.

The Company uses the Black-Scholes valuation model to estimate the fair value of stock options granted under both the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan, which requires the Company to make certain weighted-average valuation estimates and assumptions for stock-based awards, principally as follows:

- With respect to the PAVmed Inc. 2014 Equity Plan, the expected stock price volatility is based on the historical stock price volatility of PAVmed Inc. common stock and the volatilities of similar entities within the medical device industry over the period commensurate with the expected term with respect to stock options granted to the board of directors and employees in the years ended December 31, 2022 and 2021;
- With respect to stock options granted under the Lucid Diagnostics Inc. 2018 Equity Plan, the expected stock price volatility was based on the historical stock price volatility of similar entities within the medical device industry over the period commensurate with the expected term with respect to stock options granted to employees in the years ended December 31, 2022 and 2021;
- The risk-free interest rate is based on the interest rate payable on U.S. Treasury securities in effect at the time of grant for a period commensurate with either the expected term or the remaining contractual term, as applicable, of the stock option; and,
- The expected dividend yield is based on annual dividends of $0.00 as there have not been dividends paid to-date, and there is no plan to pay dividends for the foreseeable future.

The price per share of PAVmed Inc. common stock used in the computation of estimated fair value of stock options and restricted stock awards granted under the PAVmed Inc. 2014 Equity Plan is its quoted closing price per share.

On October 14, 2021, Lucid Diagnostics Inc. completed an initial public offering ("IPO") of its common stock under an effective registration statement on Form S-1 (SEC File No. 333-259721), wherein a total of 5.0 million IPO shares of common stock of Lucid Diagnostics Inc. were issued, with such total IPO shares inclusive of 571,428 shares issued to PAVmed Inc. The price per share of Lucid Diagnostics Inc. common stock used in the computation of estimated fair value of stock options and restricted stock awards granted under the Lucid Diagnostics Inc. 2018 Equity Plan is as follows: (i) for the period October 14, 2021 to December 31, 2022 it is its quoted closing price per share; and (ii) for the period January 1, 2021 to October 14, 2021, it was estimated using a probability-weighted average expected return methodology ("PWERM"), which involves the determination of equity value under various exit scenarios and an estimation of the return to the common stockholders under each scenario.

Financial Instruments Fair Value Measurements

FASB ASC Topic 820, Fair Value Measurement, (ASC 820) defines fair value as the price which would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at a transaction measurement date. The ASC 820 three-tier fair value hierarchy prioritizes the inputs used in the valuation methodologies, as follows:

Level 1	Valuations based on quoted prices for identical assets and liabilities in active markets.
Level 2	Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets which are not active, or other inputs observable or can be corroborated by observable market data.
Level 3	Valuations based on unobservable inputs reflecting the Company's own assumptions, consistent with reasonably available assumptions made by other market participants. These valuations require significant judgment.

The Company evaluates its financial instruments to determine if those instruments or any embedded components of those instruments potentially qualify as derivatives required to be separately accounted for in accordance with FASB ASC Topic 815, Derivatives and Hedging (ASC 815). The accounting for warrants issued to purchase shares of common stock of the Company is based on the specific terms of the respective warrant agreement, and are generally classified as equity, but may be classified as a derivative liability if the warrant agreement provides required or potential full or partial cash settlement. A warrant classified as a derivative liability, or a bifurcated embedded conversion or settlement option classified as a derivative liability, is initially measured at its issue-date fair value, with such fair value subsequently adjusted at each reporting period, with the resulting fair value adjustment recognized as other income or expense. If upon the occurrence of an event resulting in the warrant liability or the embedded derivative liability being subsequently classified as equity, or the exercise of the warrant or the conversion option, the fair value of the derivative liability will be adjusted on such date-of-occurrence, with such date-of-occurrence fair value adjustment recognized as other income or expense, and then the derivative liability will be derecognized at such date-of-occurrence fair value.

Note 2 — Summary of Significant Accounting Policies - continued

The recurring and non-recurring estimated fair value measurements are subjective and are affected by changes in inputs to the valuation models, including the Company's common stock price, and certain Level 3 inputs, including, the assumptions regarding the estimated volatility in the value of the Company's common stock price; the Company's dividend yield; the likelihood and timing of future dilutive transactions, as applicable, along with the risk-free rates based on U.S. Treasury security yields. Changes in these assumptions can materially affect the estimated fair values.

As of December 31, 2022 and December 31, 2021, the carrying values of cash, and accounts payable, approximate their respective fair value due to the short-term nature of these financial instruments.

Fair Value Option ("FVO") Election

Under a Securities Purchase Agreement dated March 31, 2022, the Company issued a Senior Secured Convertible Note dated April 4, 2022, referred to herein as the "April 2022 Senior Convertible Note", and a Senior Secured Convertible Note dated September 8, 2022, referred to herein as the "September 2022 Senior Convertible Note", which are accounted under the "fair value option election" as discussed below.

Under Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 815, *Derivative and Hedging*, ("ASC 815"), a financial instrument containing embedded features and /or options may be required to be bifurcated from the financial instrument host and recognized as separate derivative asset or liability, with the bifurcated derivative asset or liability initially measured at estimated fair value as of the transaction issue date and then subsequently remeasured at estimated fair value as of each reporting period balance sheet date.

Alternatively, FASB ASC Topic 825, *Financial Instruments*, ("ASC 825") provides for the "fair value option" ("FVO") election. In this regard, ASC 825-10-15-4 provides for the FVO election (to the extent not otherwise prohibited by ASC 825-10-15-5) to be afforded to financial instruments, wherein the financial instrument is initially measured at estimated fair value as of the transaction issue date and then subsequently remeasured at estimated fair value as of each reporting period balance sheet date, with changes in the estimated fair value recognized as other income (expense) in the statement of operations. The estimated fair value adjustment of the April 2022 Senior Convertible Note is presented in a single line item within other income (expense) in the accompanying consolidated statement of operations (as provided for by ASC 825-10-50-30(b)). Further, as required by ASC 825-10-45-5, to the extent a portion of the fair value adjustment is attributed to a change in the instrument-specific credit risk, such portion would be recognized as a component of other comprehensive income ("OCI") (for which there was no such adjustment with respect to the April 2022 Senior Convertible Note or the September 2022 Senior Convertible Note).

See Note 13, *Financial Instruments Fair Value Measurements*, with respect to the FVO election; and Note 14, *Debt*, for a discussion of the April 2022 Senior Convertible Note and the September 2022 Senior Convertible Note.

Financial Instruments - Derivatives

The Company evaluates its financial instruments to determine if the financial instrument itself or if any embedded components of a financial instrument potentially qualify as derivatives required to be separately accounted for in accordance with FASB ASC Topic 815, Derivatives and Hedging (ASC 815). The accounting for warrants issued to purchase shares of common stock of the Company is based on the specific terms of the respective warrant agreement, and are generally classified as equity, but may be classified as a derivative liability if the warrant agreement provides required or potential full or partial cash settlement. A warrant classified as a derivative liability, or a bifurcated embedded conversion or settlement option classified as a derivative liability, is initially measured at its issue-date fair value, with such fair value subsequently adjusted at each reporting period, with the resulting fair value adjustment recognized as other income or expense. If upon the occurrence of an event resulting in the warrant liability or the embedded derivative liability being subsequently classified as equity, or the exercise of the warrant or the conversion option, the fair value of the derivative liability will be adjusted on such date-of-occurrence, with such date-of-occurrence fair value adjustment recognized as other income or expense, and then the derivative liability will be derecognized at such date-of-occurrence fair value.

Research and Development Expenses

Research and development expenses are recognized as incurred and include the salary and stock-based compensation of employees engaged in product research and development activities, and the costs related to the Company's various contract research service providers, suppliers, engineering studies, supplies, and outsourced testing and consulting fees, as well as depreciation expense and rental costs for equipment used in research and development activities, and fees incurred for access to certain facilities of contract research service providers.

Patent Costs and Purchased Patent License Rights

Patent related costs in connection with filing and prosecuting patent applications and patents filed by the Company are expensed as incurred and are included in the line item captioned "general and administrative expenses" in the accompanying consolidated statements of operations. Patent fee reimbursement expense incurred under the patent license agreement agreements are included in the line item captioned "research and development expenses" in the accompanying consolidated statements of operations.

Note 2 — Summary of Significant Accounting Policies - continued

The Company has entered into agreements with third parties to acquire technologies for potential commercial development. Such agreements generally require an initial payment by the Company when the contract is executed. The purchase of patent license rights for use in research and development activities, including product development, are expensed as incurred and are classified as research and development expense. Additionally, the Company may be obligated to make future royalty payments in the event the Company commercializes the technology and achieves a certain sales volume. In accordance with Financial Accounting Standards Board ("FASB") Accounting Standard Codification ("ASC") Topic 730, "Research and Development", ("ASC 730"), expenditures for research and development, including upfront licensing fees and milestone payments associated with products not yet been approved by the United States Food and Drug Administration ("FDA"), are charged to research and development expense as incurred. Future contract milestone and /or royalty payments will be recognized as expense when achievement of the milestone is determined to be probable and the amount of the corresponding milestone can be objectively estimated.

Income Taxes

The Company accounts for income taxes using the asset and liability method, as required by FASB ASC Topic 740, Income Taxes, (ASC 740). Current tax liabilities or receivables are recognized for estimated income tax payable and/or refundable for the current year. Deferred tax assets and deferred tax liabilities are recognized for estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis, along with net operating loss and tax credit carryforwards. Deferred tax assets and deferred tax liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Changes in deferred tax assets and deferred tax liabilities are recorded in the provision for income taxes.

Under ASC 740, a "more-likely-than-not" criterion is applied when assessing the estimated realization of deferred tax assets through their utilization to reduce future taxable income, or with respect to a deferred tax asset for tax credit carryforward, to reduce future tax expense. A valuation allowance is established, when necessary, to reduce deferred tax assets, net of deferred tax liabilities, when the assessment indicates it is more-likely-than-not, the full or partial amount of the net deferred tax asset will not be realized. As a result of the evaluation of the positive and negative evidence bearing upon the estimated realizability of net deferred tax assets, and based on a history of operating losses, it is more-likely-than-not the deferred tax assets will not be realized, and therefore a valuation allowance reserve equal to the full amount of the deferred tax assets, net of deferred tax liabilities, has been recognized as a charge to income tax expense as of December 31, 2022 and 2021.

The Company recognizes the benefit of an uncertain tax position it has taken or expects to take on its income tax return if such a position is more-likely-than-not to be sustained upon examination by the taxing authorities, with the tax benefit recognized being the largest amount having a greater than 50% likelihood of being realized upon ultimate settlement. As of December 31, 2022, the Company does not have any unrecognized tax benefits resulting from uncertain tax positions.

The Company's policy is to record interest and penalties related to income taxes as part of its income tax provision. There were no amounts accrued for penalties or interest as of December 31, 2022 and December 31, 2021 or recognized during the years ended December 31, 2022 and 2021. The Company is not aware of any issues under review to potentially result in significant payments, accruals, or material deviations from its position.

Net Loss Per Share

The net loss per share is computed by dividing each of the respective net loss by the number of "basic weighted average common shares outstanding" and diluted weighted average shares outstanding" for the reporting period indicated. The basic weighted-average shares common shares outstanding are computed on a weighted average based on the number of days the shares of common stock of the Company are issued and outstanding during the respective reporting period indicated. The diluted weighted average common shares outstanding are the sum of the basic weighted-average common shares outstanding plus the number of common stock equivalents' incremental shares on an if-converted basis, computed using the treasury stock method, computed on a weighted average based on the number of days the incremental shares would potentially be issued and outstanding during the periods indicated, if dilutive. The Company's common stock equivalents include convertible preferred stock, common stock purchase warrants, and stock options.

Notwithstanding, as the Company has a net loss for each reporting period presented, only the basic weighted average common shares outstanding are used to compute the basic and diluted net loss per share attributable to PAVmed Inc. and the basic and diluted net loss per share attributable to PAVmed Inc. common stockholders, for each reporting period presented.

The Series B Convertible Preferred Stock dividends earned as of the each of the respective periods are included in the calculation of basic and diluted net loss attributable to PAVmed Inc. common stockholders for each respective period presented. Further, the Series B Convertible Preferred Stock has the right to receive common stock dividends. As such, the Series B Convertible Preferred Stock would potentially be considered participating securities under the two-class method of calculating net loss per share. However, the Company has incurred net losses to-date, and as such holders are not contractually obligated to share in the losses, there is no impact on the Company's net loss per share calculation for the periods presented.

Note 2 — Summary of Significant Accounting Policies - continued

JOBS Act EGC Accounting Election

The Company's designation as an "emerging growth company" or "EGC" under the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act"), expired during 2021. As an EGC, the company had irrevocably elected to adopt new or revised accounting standards using the effective date applicable to private companies. With the expiry of its EGC designation, effective December 31, 2021, the Company adopted the previously deferred accounting standards in accordance with the effective date applicable to non-EGC public companies, as such effective dates are applicable to SEC smaller reporting company requirements.

Reclassifications

Certain prior-year amounts have been reclassified to conform to the current year presentation, which includes presenting costs of revenue within operating expenses on the statements of operations, in the consolidated financial statements and accompanying notes to the consolidated financial statements. The impact of the reclassifications made to prior year amounts is not material and did not affect net loss.

Recent Accounting Standards Updates Adopted

In August 2020, the FASB issued ASU 2020-06, Debt – Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging – Contracts in Entity's Own Equity (Subtopic 815 – 40), ("ASU 2020-06"). ASU 2020-06 simplifies the accounting for certain financial instruments with characteristics of liabilities and equity, by eliminating the beneficial conversion and cash conversion accounting models previously contained in ASC 470-20 that required separate accounting for embedded conversion features. ASU 2020-06 also simplified the assessment of a financial instrument settlement to determine whether a contract is an entity's own equity qualifies for equity classification by removing certain conditions from ASC 815-4-25. The ASU 2020-06 amendments are effective for fiscal years beginning after December 15, 2023, and interim periods within those fiscal years. Early adoption is permitted, but no earlier than fiscal years beginning after December 15, 2020, including interim periods within those fiscal years. The Company's adoption of the ASU 2020-06 guidance as of January 1, 2021 did not have an effect on the Company's consolidated financial statements.

In December 2019, the FASB issued ASU No. 2019-12, "Income Taxes: Simplifying the Accounting for Income Taxes", ("ASU 2019-12"). The guidance of ASU 2019-12 removes certain exceptions for recognizing deferred taxes for investments, performing intra-period allocation, and calculating income taxes in interim periods, and adds revised guidance to reduce complexity in certain areas, including recognizing deferred taxes for tax goodwill and allocating taxes to members of a consolidated group. Adoption of the guidance of ASU 2019-12 is required for annual and interim financial statements beginning after December 15, 2020. The Company's adoption of the ASU 2019-12 guidance as of January 1, 2021 did not have an effect on the Company's consolidated financial statements.

Effective December 31, 2021, the Company adopted FASB ASC Topic 842, Leases, ("ASC 842"). ASC 842 established a right-of-use ("ROU") model requiring a lessee to recognize a ROU asset and a lease liability for all leases with terms greater-than 12 months. Leases are classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The Company's adoption of ASC 842 did not have an effect on the Company's consolidated financial statements. See Note 9, *Leases*.

Note 3 — Revenue from Contracts with Customers

EsoGuard Commercialization Agreement

The Company, through its majority-owned subsidiary, Lucid Diagnostics Inc., entered into the EsoGuard Commercialization Agreement, dated August 1, 2021, with its former commercial laboratory service provider, ResearchDx Inc. ("RDx"), an unrelated third-party. The EsoGuard Commercialization Agreement was on a month-to-month basis, and was terminated on February 25, 2022 upon the execution of an asset purchase agreement ("APA") dated February 25, 2022, between LucidDx Labs Inc. (a wholly-owned subsidiary of Lucid Diagnostics Inc.) and RDx, with such agreement further discussed in Note 6*, Asset Purchase Agreement and Management Services Agreement.*

Revenue Recognized

In the years ended December 31, 2022 and December 31, 2021, the Company recognized total revenue of $377 and $500, respectively. The Company recognized revenue of $188 resulting from the delivery of patient EsoGuard test results. Revenue recognized from customer contracts deemed to include a variable consideration transaction price is limited to the unconstrained portion of the variable consideration. In addition, the Company's revenue for the year ended December 31, 2022 includes $189 of revenue recognized under the EsoGuard Commercialization Agreement, which represented the minimum fixed monthly fee of $100 for the period January 1, 2022 to the February 25, 2022 termination date as discussed above. The monthly fee was deemed to be collectible for such period as RDx has timely paid the applicable respective monthly fee. In the year ended December 31, 2021, the Company recognized total revenue of $500 under the EsoGuard Commercialization Agreement.

Cost of Revenue

The cost of revenues principally includes the costs related to the Company's laboratory operations (excluding estimated costs associated with research activities), the costs related to the EsoCheck cell collection device, cell sample mailing kits and license royalties.

In the year ended December 31, 2022, the cost of revenue was $3,614 and was primarily related to costs for our laboratory operations and EsoCheck device supplies, however also includes $369 reflecting costs attributable to delivering the services under the EsoGuard Commercialization Agreement for the period January 1, 2022 to February 25, 2022. In the year ended December 31, 2021, the cost of revenue was $585, which solely related to the EsoGuard Commercialization Agreement.

Note 4 — Patent License Agreement - Case Western Reserve University

Overview

The Company, through its majority-owned subsidiary Lucid Diagnostics Inc., entered into a patent license agreement with Case Western Reserve University ("CWRU"), captioned the Amended and Restated License Agreement and dated August 23, 2021 ("Amended CWRU License Agreement"). The Amended CWRU License Agreement is a successor to and replaced in its entirety the previous CWRU License Agreement, dated May 12, 2018, between Lucid Diagnostics Inc. and CWRU. The Amended CWRU License Agreement terminates upon the expiration of certain related patents, or on May 12, 2038 in countries where no such patents exist, or upon expiration of any exclusive marketing rights granted by the FDA or other U.S. government agency, whichever comes later.

The Amended CWRU License Agreement (as did the predecessor CWRU License Agreement) provides for the exclusive worldwide license of the intellectual property rights for the proprietary technologies of two distinct technology components - the "EsoCheck Cell Collection Device" referred to as "EsoCheck®"; and a panel of proprietary methylated DNA biomarkers, a laboratory developed test ("LDT"), referred to as "EsoGuard®"; and together are collectively referred to as the "EsoGuard Technology".

The CWRU License Agreement Fee was $273. On the August 23, 2021 effective date of the Amended CWRU License Agreement, the remaining balance of $223 became payable, and such amount was paid in September 2021. Additionally, also in September 2021, the Company paid a $10 amendment fee in connection with the Amended CWRU License Agreement. Additionally, the Amended CWRU License Agreement provides for each of patent fees reimbursement payments; milestone payments; and royalty payments - each as discussed below.

Patent Fees Reimbursement

Lucid Diagnostics Inc. is responsible for reimbursement of certain CWRU billed patent fees. See Note 5, *Related Party Transactions*, for patent fee reimbursement payments paid to CWRU in the years ended December 31, 2022 and 2021.

Milestones

The (predecessor) CWRU License Agreement contained milestones, including regulatory milestones with respect to the FDA 501(k) submission of EsoCheck and the FDA clearance of EsoCheck, respectively regulatory submissions and clearances; which were achieved in accordance with the requisite contractual due dates, for which a $75 research and development expense was recognized and paid with respect to the achievement of the regulatory milestone related to FDA clearance of EsoCheck. The CWRU License Agreement was amended effective February 12, 2021, to: change the achievement date of commercialization milestone from November 2020 to August 2021; to eliminate the payment with respect to the commercialization milestone; and to add a non-refundable $100 payment to CWRU in consideration for such changes to the commercialization milestone ("CWRU License Agreement Amendment Fee"), with such fee recognized as general and administrative expense as of December 31, 2020 and paid in February 2021. The regulatory milestone related to FDA PMA submission of a licensed product ("PMA Milestone") is included in the Amended CWRU License Agreement, and is the sole remaining unachieved milestone, for which a $200 milestone payment would be payable to CWRU upon its achievement.

Royalty Fee

Under the Amended CWRU License Agreement, the Company is required to pay a royalty fee to CWRU with respect to the "Licensed Products" (as defined in the CWRU License Agreement) of a percentage of "Net Sales", as defined in the Amended CWRU License Agreement, as follows: 5.0% of Net Sales up to $100.0 million per year; and 8.0% of Net Sales of $100.0 million or greater per year, with such amounts subject-to a minimum annual royalty fee.

The base minimum annual royalty fee is $50 commencing January 1 following the first anniversary of the "First Commercial Sale" of a "Licensed Product" (as such terms are defined in the Amended CWRU License Agreement). The minimum annual royalty fee increases to each of: $150 if the annual "Net Sales" (as defined in the Amended CWRU License Agreement) exceed $25.0 million up to $50.0 million; $300 if annual Net Sales exceed $50.0 million up to $100.0 million; and $600 if annual Net Sales exceed $100.0 million. The Company recognized a 5.0% royalty fee payment liability as of December 31, 2022 and 2021 with respect to the revenue recognized under the EsoGuard Commercialization Agreement, dated August 1, 2021, between Lucid Diagnostics Inc. and Research Dx Inc. The Company recorded a royalty expense of $23 and $25 for the years ended December 31, 2022 and 2021, respectively.

Additionally, the Company is required to pay a royalty fee on (sub-license) "Other Proceeds" (as defined in the Amended CWRU License Agreement) of: 30% of sub-license proceeds to extent the sub-license proceeds are realized prior to the first commercial Sale of a Licensed Product; or 15% of sub-license proceeds to extent the sub-license proceeds are realized after the first commercial Sale of a Licensed Product.

Consulting Agreements with Physician Inventors - Intellectual Property - CWRU License Agreement

Lucid Diagnostics Inc. entered into consulting agreements with each of the three physician inventors of the intellectual property licensed under the Amended CWRU License Agreement ("Physician Inventors"), with each such consulting agreement providing for compensation on a contractual rate per hour for consulting services provided, and an expiration date of May 12, 2024, upon each of the respective the agreements' renewal effective May 12, 2021. Additionally, each of the Physician Inventors have been granted stock options and restricted stock awards under the Lucid Diagnostics Inc. 2018 Long-Term Incentive Equity Plan; and stock options under the PAVmed Inc. 2014 Long-Term Incentive Equity Plan. See Note 5, *Related Party Transactions*, with respect to the consulting fee expense and stock based compensation expense recognized with respect to the Physician Inventors consulting agreements and stock options and restricted awards discussed above; and Note 15, *Stock-Based Compensation*, for information regarding each of the "Lucid Diagnostics Inc. 2018 Long-Term Incentive Equity Plan" and the separate "PAVmed Inc. 2014 Long-Term Incentive Equity Plan".

Note 5 — Related Party Transactions

Case Western Reserve University and Physician Inventors - Amended CWRU License Agreement

Case Western Reserve University ("CWRU") and each of the three physician inventors ("Physician Inventors") of the intellectual property licensed under the amended and restated patent license agreement with CWRU, dated August 23, 2021 (the "Amended CWRU License Agreement"), each hold a minority equity ownership interest in Lucid Diagnostics Inc. The expenses incurred with respect to the Amended CWRU License Agreement and the three Physician Inventors, as classified in the accompanying consolidated statement of operations for the periods indicated are summarized as follows:

	Years Ended December 31,	
	2022	2021
Cost of Revenue		
CWRU – Royalty Fees	$ 23	$ 25
General and Administrative Expense		
Amended CWRU – License Agreement - reimbursement of patent legal fees	69	10
Stock-based compensation expense – Physician Inventors' restricted stock awards	1,095	910
Research and Development Expense		
Amended CWRU – License Agreement - reimbursement of patent legal fees	209	195
Fees - Physician Inventors' consulting agreements	44	29
Sponsored research agreement	6	—
Stock-based compensation expense – Physician Inventors' stock options	203	169
Total Related Party Expenses	$ 1,649	$ 1,338

See Note 15, *Stock-Based Compensation*, for information regarding each of the "PAVmed Inc. 2014 Long-Term Incentive Equity Plan" and the separate "Lucid Diagnostics Inc 2018 Long-Term Incentive Equity Plan"; and Note 18, *Noncontrolling Interest*, for a discussion of Lucid Diagnostics Inc. and the corresponding noncontrolling interests.

Other Related Party Transactions

Lucid Diagnostics Inc. previously entered into a consulting agreement with Stanley N. Lapidus, effective June 2020 with such consulting agreement providing for compensation on a contractual rate per hour for consulting services provided. In July 2021, Mr. Lapidus was appointed as Vice Chairman of the Board of Directors of Lucid Diagnostics Inc. Lucid Diagnostics Inc. recognized general and administrative expense of $21 in the year ended December 31, 2021 in connection with the consulting agreement.

Effective June 2021, Veris Health Inc. entered into a consulting agreement with Andrew Thoreson, M.D. which provides for compensation on a contractual rate per hour for consulting services provided. Dr. Thoreson holds a partial ownership interest in the legal entity which holds a minority interest in Veris Health Inc. Veris Health Inc. recognized general and administrative expense of $56 and $54 in the years ended December 31, 2022 and 2021, respectively, in connection with the consulting agreement.

Note 6 — Asset Purchase Agreement and Management Services Agreement

Asset Purchase Agreement - ResearchDx Inc.

LucidDx Labs Inc., a wholly-owned subsidiary of Lucid Diagnostics Inc., entered into an asset purchase agreement ("APA") dated February 25, 2022, with ResearchDx, Inc. ("RDx"), an unrelated third-party - ("APA-RDx"). Under the APA-RDx, LucidDx Labs Inc. acquired certain assets from RDx which were combined with LucidDx Labs Inc. purchased and leased property and equipment to establish a Company-owned Commercial Lab Improvements Act ("CLIA") certified, College of American Pathologists ("CAP") accredited commercial clinical laboratory capable of performing the EsoGuard® Esophageal DNA assay, inclusive of DNA extraction, next generation sequencing ("NGS") and specimen storage. Prior to February 25, 2022, RDx provided such laboratory services at its owned CLIA-certified, CAP-accredited clinical laboratory.

The total purchase price consideration payable under the APA-RDx is a face value of $3,200 comprised of three contractually specified periodic payments. The APA-RDx is being accounted for as an asset acquisition, with the recognition of an intangible asset of approximately $3,200, which is included in "Intangible assets, net" on the accompanying consolidated balance sheet, as further discussed in Note 10, *Intangible Assets, net.* In the year ended December 31, 2022, a total of $3,200, of cash was paid with respect to the periodic payments.

Additionally, the APA-RDx requires the Company to pay a total of $3,000 to be paid as twelve (12) equal installment payments commencing May 25, 2022 and then on each three month anniversary thereof, inclusive of a final installment payment on February 25, 2025, with such installment payments recognized as current period expense as incurred. In the year ended December 31, 2022, as provided for in the APA-RDx, installment payments were settled with the issuances of 326,701 shares of common stock of Lucid Diagnostics Inc., with such shares having fair values of $653 (with the fair value measured as the quoted closing price on the dates the shares were issued), which was recognized as a current period expense included in general and administrative expenses in the accompanying consolidated statement of operations.

The APA-RDx provides for each of an acceleration and a cancellation of the remaining unpaid installment payments, summarized as follows:

- The payment of the remaining unpaid installment payments will be accelerated as immediately due and payable as of the date the "MSA-RDx" (as such agreement is discussed below) is either terminated by LucidDx Labs Inc. without cause or if it is terminated by mutual agreement between LucidDx Labs Inc. and RDx.
- The payment of the remaining unpaid installment payments will be cancelled if the MSA-RDx is terminated by LucidDx Labs Inc. for cause, defined as the occurrence of any one of: (i) a material breach by RDx which is not cured within thirty days of LucidDx Labs Inc. written notice; (ii) RDx becomes insolvent and /or bankrupt; or (ii) RDx fails to comply with applicable statutes, is barred from participating in federal health care programs, or by action of changes in law or regulation, or by action of judicial interpretation of law, or by judicial civil proceedings decisions.

Management Services Agreement - ResearchDx Inc

LucidDx Labs Inc. and RDx entered into a separate management services agreement ("MSA-RDx"), dated and effective February 25, 2022, with such agreement having a term of three years commencing on the agreement's effective date, and an initial fee of $150 per quarter. The MSA-RDx provides for the cancellation of the remaining unpaid installment payments upon termination of the MSA-RDx for any reason or no reason by either party thereto.

Termination of Management Services Agreement and Modification of Other Payment Obligations - ResearchDx Inc

On February 14, 2023, Lucid Diagnostics and LucidDx Labs Inc. entered into an agreement (the "MSA Termination Agreement") with RDx, pursuant to which the parties mutually agreed to terminate the MSA-RDx without cause. The termination was effective as February 10, 2023. Until the termination of the MSA-RDx, RDx had continued to provide certain testing and related services for the Laboratory in accordance with the terms of the MSA-RDx.

The MSA Termination Agreement reduces the remaining amounts of the earnout payments and management fees due under the APA-RDx and the MSA-RDx to $725. The payment was satisfied through the issuance of 553,436 shares of Lucid Diagnostics' common stock in February 2023. Lucid Diagnostics was not required to make any cash payments in connection with the termination.

Note 7 — Prepaid Expenses, Deposits, and Other Current Assets

Prepaid expenses and other current assets consisted of the following as of:

	December 31, 2022	December 31, 2021
Advanced payments to service providers and suppliers	$ 599	$ 808
Prepaid insurance	300	1,856
Deposits	3,005	1,989
EsoCheck cell collection supplies	59	434
EsoGuard mailer supplies	52	59
Veris Box supplies	150	—
CarpX devices	—	33
Total prepaid expenses, deposits and other current assets	$ 4,165	$ 5,179

Note 8 — Fixed Assets

Fixed assets, less accumulated depreciation, consisted of the following as of:

	Estimated Useful Life	December 31, 2022	December 31, 2021
Computer and office equipment	2-5 years	$ 784	$ 426
Laboratory equipment	3-7 years	2,064	1,161
Furniture and fixtures	3-5 years	379	96
Leasehold improvements	(1)	2	2
Assets under construction	n/a	30	38
Total Fixed Assets		3,259	1,723
Less Accumulated Depreciation		(808)	(138)
Total Fixed Assets, net		$ 2,451	$ 1,585

(1)Lesser of remaining lease term or estimated useful life.

Depreciation expense of $673 and $80 for the years ended December 31, 2022 and 2021, respectively, is included in general and administrative expenses in the accompanying consolidated statements of operations.

Note 9 — Leases

During the year ended December 31, 2022, the Company entered into additional lease agreements that have commenced and are classified as operating leases and short-term leases, including for each of: a research and development facility; a commercial clinical laboratory; additional Lucid Test Centers; and for office space.

The components of lease expense were as follows:

	Year Ended December 31,	
	2022	2021
Operating lease cost	$ 1,174	$ —
Short-term lease cost	191	191
Variable lease cost	52	—
Total lease cost	$ 1,417	$ 191

The Company's future lease payments as of December 31, 2022, which are presented as operating lease liabilities, current portion and operating lease liabilities, less current portion on the Company's consolidated balance sheets are as follows:

2023	$ 1,327
2024	1,275
2025	323
2026	272
2027	132
Thereafter	—
Total lease payments	$ 3,329
Less: imputed interest	(342)
Present value of lease liabilities	$ 2,987

Supplemental disclosure of cash flow information related to the Company's cash and non-cash activities with its leases are as follows:

	Year Ended December 31,	
	2022	2021
Cash paid for amounts included in the measurement of lease liabilities		
Operating cash flows from operating leases	$ 1,078	$ —
Non-cash investing and financing activities		
Right-of-use assets obtained in exchange for new operating lease liabilities	$ 3,949	$ —
Weighted-average remaining lease term - operating leases (in years)	2.84	—
Weighted-average discount rate - operating leases	7.875%	—%

As of December 31, 2022, the Company's right-of-use assets from operating leases are $3,037, which are reporting in right-of-use assets - operating leases in the consolidated balance sheets. As of December 31, 2022, the Company has outstanding operating lease obligations of $2,987, of which $1,141 is reported in operating lease liabilities, current portion and $1,846 is reporting in operating lease liabilities less current portion in the Company's consolidated balance sheets. The Company did not have operating leases as of December 31, 2021. The Company calculates its incremental borrowing rates for specific lease terms, used to discount future lease payments, as a function of the financing terms the Company would likely receive on the open market.

In September 2022, the Company entered into a lease agreement for its principal corporate offices, in New York, New York. The lease agreement term is from the September 15, 2022 execution date to the date which is seven years and eight months from the lease commencement date, with the rent abated for the first eight months of the lease term. The lease commenced on February 1, 2023. The aggregate (undiscounted) rent payments are approximately $3.2 million over the lease term.

Note 10 — Intangible Assets, net

Intangible assets, less accumulated amortization, consisted of the following as of:

	Estimated Useful Life	December 31, 2022	December 31, 2021
Defensive asset	60 months	$ 2,105	$ 2,105
Laboratory licenses and certifications and laboratory information management software	24 months	3,200	—
Other	1 year	70	70
Total Intangible assets		5,375	2,175
Less Accumulated Amortization		(1,930)	(146)
Intangible Assets, net		$ 3,445	$ 2,029

The defensive technology intangible asset was recognized upon its acquisition of CapNostics, LLC, an unrelated third-party, for total purchase consideration paid on the October 5, 2021 acquisition date of approximately $2.1 million in cash. The CapNostics LLC transaction was accounted for as an asset acquisition, resulting in the recognition of the defensive technology intangible asset. The defensive technology intangible asset is being amortized on a straight-line basis over an expected useful life 60 months commencing on the acquisition date.

The intangible assets recognized under the APA-RDx are the laboratory licenses and certifications, inclusive of a CLIA certification, CAP accreditation, and clinical laboratory licenses for five (5) U.S. States transfer to the Company from RDx, and a laboratory information management software perpetual-use royalty-free license granted under the APA-RDx, with such intangible asset having a useful life of twenty-four months commencing on the APA-RDx February 25, 2022 transaction date.

Amortization expense of the intangible assets discussed above was $1,784 and $146 for the years ended December 31, 2022 and 2021, respectively, and is included in amortization of acquired intangible assets in the accompanying consolidated statements of operations. As of December 31, 2022, the estimated future amortization expense associated with the Company's finite-lived intangible assets for each of the five succeeding fiscal years is as follows:

2023	$ 2,021
2024	688
2025	421
2026	315
Total	$ 3,445

Note 11 — Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities consisted of the following items as of:

	December 31, 2022	December 31, 2021
Compensation and Employee Benefits	$ 1,947	$ 3,151
CWRU Amended License Agreement - Royalty fee	10	25
Operating expenses	1,748	1,083
Total accrued expenses and other current liabilities	$ 3,705	$ 4,259

The "Compensation and Employee Benefits" includes: discretionary bonus payments to employees; unused employee vacation time; and employee payroll deductions related to the PAVmed Inc. Employee Stock Purchase Plan ("PAVmed Inc. ESPP"). See Note 15, *Stock-Based Compensation*, for additional information on the PAVmed Inc. ESPP.

Note 12 — Commitment and Contingencies

Legal Proceedings

Delaware Court of Chancery Complaint

On November 2, 2020, a stockholder of the Company, on behalf of himself and other similarly situated stockholders, filed a complaint in the Delaware Court of Chancery alleging broker non-votes were not properly counted in accordance with the Company's bylaws at the Company's Annual Meeting of Stockholders on July 24, 2020, and, as a result, asserted certain matters deemed to have been approved were not so approved (including matters relating to the increase in the size of the PAVmed Inc. 2014 Long-Term Incentive Equity Plan and the PAVmed Inc. Employee Stock Purchase Plan). The relief sought under the complaint included certain corrective actions by the Company, but did not seek any specific monetary damages. The Company did not believe it was clear the prior approval of these matters was invalid or otherwise ineffective. However, to avoid any uncertainty and the expense of further litigation, on January 5, 2021, the Company's board of directors determined it would be advisable and in the best interests of the Company and its stockholders to re-submit these proposals to the Company's stockholders for ratification and/or approval. In this regard, the Company held a special meeting of stockholders on March 4, 2021, at which such matters were ratified and approved. The parties reached agreement on a Settlement Term Sheet Agreement, dated January 28, 2021, to settle the complaint, the terms of which did not contemplate payment of monetary damages to the putative class in the proceeding. In connection with the foregoing, on August 3, 2022, the parties agreed that plaintiff's counsel would not seek an award from the Court in excess of $450, to be paid by the Company, upon Court approval, as compensation for the benefits conferred by the settlement, and the Company would not object to an award of up to such maximum amount. The settlement and a plaintiff's fee award of $450 were approved by the Court on November 3, 2022, with such award having been subsequently paid by the Company in December 2022.

Benchmark Investments, Inc. / Benchmark Investments LLC

On December 23, 2020, Benchmark Investments, Inc. filed a complaint against the Company in the U.S. District Court of the Southern District of New York alleging the registered direct offerings of shares of common stock of the Company completed in December 2020 were in violation of provisions set forth in an engagement letter between the Company and Kingswood Capital Markets, a "division" of Benchmark Investments, Inc. On December 16, 2021, the court granted PAVmed's motion to dismiss the case for lack of subject matter jurisdiction. On February 7, 2022, Benchmark Investments LLC, which claimed to be a successor to Benchmark Investments, Inc., filed a new complaint in the Supreme Court of the State of New York, New York County, asserting claims similar to those in the federal action, and adding to its allegations that financings conducted by the Company in January 2021 and February 2021 also violated the Company's engagement letter with Kingswood Capital Markets. On February 13, 2023, the Company entered into a settlement agreement (the "Settlement Agreement") with EF Hutton, a division of Benchmark Investments, LLC (f/k/a Kingswood Capital Markets, a division of Benchmark Investments, Inc.) ("EF Hutton") and Benchmark Investments, LLC (f/k/a Benchmark Investments, Inc.). Pursuant to the Settlement Agreement, the Company has paid EF Hutton $450 in full and final satisfaction of all claims and disputes the parties made or could have made against one another arising out of or relating in any way to the above described actions. The Settlement Agreement also included a mutual release and certain other covenants that are customary for agreements of this nature. As of December 31, 2022, the Company has fully accrued for this settlement, which is included in accrued expenses and other current liabilities on the Company's consolidated balance sheets.

Other Matters

In the ordinary course of our business, particularly as it begins commercialization of its products, the Company may be subject to certain other legal actions and claims, including product liability, consumer, commercial, tax and governmental matters, which may arise from time to time. Except as otherwise noted herein, the Company does not believe it is currently a party to any other pending legal proceedings. Notwithstanding, legal proceedings are subject-to inherent uncertainties, and an unfavorable outcome could include monetary damages, and excessive verdicts can result from litigation, and as such, could result in a material adverse impact on the Company's business, financial position, results of operations, and /or cash flows. Additionally, although the Company has specific insurance for certain potential risks, the Company may in the future incur judgments or enter into settlements of claims which may have a material adverse impact on the Company's business, financial position, results of operations, and /or cash flows.

Note 13 — Financial Instruments Fair Value Measurements

Recurring Fair Value Measurements

The fair value hierarchy table for the reporting date noted is as follows:

	Fair Value Measurement on a Recurring Basis at Reporting Date Using[1]			
	Level-1 Inputs	Level-2 Inputs	Level-3 Inputs	Total
December 31, 2022				
Senior Secured Convertible Note - April 2022	$ —	$ —	$ 22,000	$ 22,000
Senior Secured Convertible Note - September 2022	$ —	$ —	$ 11,650	$ 11,650
Totals	$ —	$ —	$ 33,650	$ 33,650

(1)As noted above, as presented in the fair value hierarchy table, Level-1 represents quoted prices in active markets for identical items, Level-2 represents significant other observable inputs, and Level-3 represents significant unobservable inputs. There were no transfers between the respective Levels during the year ended December 31, 2022.

As discussed in Note 14, *Debt*, the Company issued Senior Secured Convertible Notes dated April 4, 2022 and September 8, 2022, with an initial $27.5 million face value principal ("April 2022 Senior Convertible Note") and an initial $11.25 million face value principal ("September 2022 Senior Convertible Note"), respectively. Both convertible notes are accounted for under the ASC 825-10-15-4 fair value option ("FVO") election, wherein, the financial instrument is initially measured at its issue-date estimated fair value and subsequently remeasured at estimated fair value on a recurring basis at each reporting period date.

The estimated fair value of the financial instruments classified within the Level 3 category was determined using both observable inputs and unobservable inputs. Unrealized gains and losses associated with liabilities within the Level 3 category include changes in fair value attributable to both observable (e.g., changes in market interest rates) and unobservable (e.g., changes in unobservable long- dated volatilities) inputs.

The estimated fair value of the April 2022 Senior Convertible Note as of each of April 4, 2022 and December 31, 2022, and the estimated fair value of the September 2022 Senior Convertible Note as of each of September 8, 2022 and December 31, 2022 were computed using a Monte Carlo simulation of the present value of its cash flows using a synthetic credit rating analysis and a required rate-of-return, using the following assumptions:

	April 2022 Senior Convertible Note: April 4, 2022	September 2022 Senior Convertible Note: September 8, 2022	April 2022 Senior Convertible Note: December 31, 2022	September 2022 Senior Convertible Note: December 31, 2022
Fair Value	$ 30,100	$ 12,200	$ 22,000	$ 11,650
Face value principal payable	$ 27,500	$ 11,250	$ 21,497	$ 11,250
Required rate of return	7.875%	7.875%	11.55%	11.35%
Conversion Price	$ 5.00	$ 5.00	$ 5.00	$ 5.00
Value of common stock	$ 1.26	$ 1.21	$ 0.48	$ 0.48
Expected term (years)	2.00	2.00	0.95	1.68
Volatility	115.00%	120.00%	165.00%	165.00%
Risk free rate	2.40%	3.42%	4.62%	4.41%
Dividend yield	—%	—%	—%	—%

The estimated fair values reported utilized the Company's common stock price along with certain Level 3 inputs (as discussed above), in the development of Monte Carlo simulation models, discounted cash flow analyses, and /or Black-Scholes valuation models. The estimated fair values are subjective and are affected by changes in inputs to the valuation models and analyses, including the Company's common stock price, the Company's dividend yield, the risk-free rates based on U.S. Treasury security yields, and certain other Level-3 inputs including, assumptions regarding the estimated volatility in the value of the Company's common stock price. Changes in these assumptions can materially affect the estimated fair values.

Note 14 — Debt

PAVmed - Senior Secured Convertible Notes

The Company entered into a Securities Purchase Agreement ("SPA") dated March 31, 2022, with an accredited institutional investor ("Investor", "Lender", and /or "Holder"), wherein, the Company agreed to sell, and the Investor agreed to purchase an aggregate of $50.0 million face value principal of debt - comprised of: an initial issuance of $27.5 million face value principal; and up to an additional $22.5 million of face value principal (upon the satisfaction of certain conditions). The debt was issued in a registered direct offering under the Company's effective shelf registration statement.

Under the SPA dated March 31, 2022, the Company issued a Senior Secured Convertible Note dated April 4, 2022, referred to herein as the "April 2022 Senior Convertible Note", with such note having a $27.5 million face value principal, a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of the Company's common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of April 4, 2024. The April 2022 Senior Convertible Note may be converted into shares of common stock of the Company at the Holder's election.

Under the same SPA, the Company issued an additional Senior Secured Convertible Note dated September 8, 2022, referred to herein as the "September 2022 Senior Convertible Note", with such note having a $11.25 million face value principal, a 7.875% annual stated interest rate, a contractual conversion price of $5.00 per share of the Company's common stock (subject to standard adjustments in the event of any stock split, stock dividend, stock combination, recapitalization or other similar transaction), and a contractual maturity date of September 6, 2024. The September 2022 Senior Convertible Note may be converted into shares of common stock of the Company at the Holder's election.

The April 2022 Senior Convertible Note proceeds were $25.0 million after deducting a $2.5 million lender fee; and additionally, the Company incurred total offering costs of approximately $601, inclusive of the payment of a total of $450 placement agent fees. The lender fee and offering costs were recognized as of the April 4, 2022 issue date as a current period expense in other income (expense) in the Company's consolidated statement of operations.

The September 2022 Senior Convertible Note proceeds were $10.2 million after deducting a $1.0 million lender fee; and additionally, the Company incurred total offering costs of approximately $209, inclusive of the payment of a total of $184 placement agent fees. The lender fee and offering costs were recognized as of the September 8, 2022 issue date as a current period expense in other income (expense) in the Company's consolidated statement of operations.

During the period from April 4, 2022 to October 3, 2022, the Company is required to pay interest expense only (on the $27.5 million face value principal), at 7.875% per annum, computed on a 360 day year. The Company paid in cash interest expense of approximately $994 for the year ended December 31, 2022.

During the period from September 8, 2022 to March 6, 2023, the Company is required to pay interest expense only (on the $11.25 million face value principal), at 7.875% per annum, computed on a 360 day year. The Company paid in cash interest expense of approximately $278 for the year ended December 31, 2022; and approximately $150 subsequent to December 31, 2022 as of March 9, 2023.

In the year ended December 31, 2022, the non-cash expense recognized for the change in the fair value of our convertible notes was approximately $1,273, related to both the April 2022 and September 2022 Senior Convertible Notes, which are presented in Change in fair value - Senior Secured Convertible Notes and Senior Convertible Note in the Company's consolidated statements of operations. The April 2022 and September 2022 Senior Convertible Notes were initially measured at their issue-date estimated fair value and subsequently remeasured at estimated fair value as of the reporting period date. The Company initially recognized a $3,550 fair value non-cash expense on the issue-dates. This initial recognition was partially offset by $2,277 of decreases in fair value upon remeasurements through December 31, 2022.

In the year ended December 31, 2021, the non-cash income recognized for the change in the fair value of our convertible notes was approximately $1,682, which are presented in Change in fair value - Senior Secured Convertible Notes and Senior Convertible Note in the Company's consolidated statements of operations. The change in the fair value adjustment of the convertible notes is principally related to the then outstanding convertible notes being repaid-in-full during the year ended December 31, 2021.

Commencing October 4, 2022, and then on each of the successive first and tenth trading day of each month thereafter through to and including April 1, 2024 (each referred to as an "Installment Date"); and on the April 4, 2024 maturity date, the Company will be required to make a principal repayment of $724 together with accrued interest thereon, with such 38 payments referred to herein as the "Installment Amount", settled in shares of common stock of the Company, subject to customary equity conditions, including minimum share price and volume thresholds, or at the election of the Company, in cash, in whole or in part.

Commencing March 6, 2023, and then on each of the successive first and tenth trading day of each month thereafter through to and including September 1, 2024 (each referred to as an "Installment Date"); and on the September 6, 2024 maturity date, the Company will be required to make a principal repayment of $296 together with accrued interest thereon, with such 38 payments referred to herein as the "Installment Amount", settled in shares of common stock of the Company, subject to customary equity conditions, including minimum share price and volume thresholds, or at the election of the Company, in cash, in whole or in part.

In addition to the Installment Amount repayments, the Holder may elect to accelerate the conversion of future Installment Amount repayments, and interest thereon, subject to certain restrictions, as defined, utilizing the then current conversion price of the most recent Installment Date conversion price.

Note 14 — Debt - continued

Subject to certain conditions being met or waived, from time to time, one or more additional closings may occur, for up to the remaining $11.25 million face value principal, upon five trading days' notice given by the Company to the Investor. The Investor's obligation to purchase the additional notes at each additional closing is subject to certain conditions set forth in the SPA dated March 31, 2022, including, among others, contractual closing requirements: minimum price and trading volume thresholds of the Company's common stock; the maximum ratio of debt to market capitalization (as defined); and minimum market capitalization (as defined), with such requirements being waived by the Investor in its sole discretion.

Additionally, effective March 31, 2023, the Investor may by written notice elect to require the Company to issue additional notes of up to $11.25 million in face value principal, so long as in doing so it would not cause the ratio of (a) the outstanding principal amount of the April 2022 Senior Convertible Note and the September 2022 Senior Convertible Note (and any additional notes issued under the SPA dated March 31, 2022), accrued and unpaid interest thereon and accrued and unpaid late charges to (b) our average market capitalization over the prior ten trading days, to exceed 25%. If the Company does not issue the additional notes contemplated by any such written notice, or if the Investor is unable to deliver any such notice prior to March 31, 2024 as a result of the limitation described in the preceding sentence, then the Company will be obligated to pay up to a maximum of a $1.35 million a break-up fee.

The payment of all amounts due and payable under both senior convertible notes are guaranteed by the Company and its subsidiaries, except for Lucid Diagnostics Inc and its subsidiaries; and the obligations under both senior convertible notes are secured by all of the assets of the Company and each guarantor, except in the case of the Lucid Diagnostics Inc. common stock held by PAVmed Inc. only 9.99% of Lucid Diagnostics Inc.'s issued and outstanding common stock is pledged to secure the indebtedness of the convertible notes.

The Company is subject to certain customary affirmative and negative covenants regarding the rank of the notes, along with the incurrence of further indebtedness, the existence of liens, the repayment of indebtedness and the making of investments, the payment of cash in respect of dividends, distributions or redemptions, the transfer of assets, the maturity of other indebtedness, and transactions with affiliates, among other customary matters.

The Company is subject to financial covenants requiring: (i) a minimum of $8.0 million of available cash at all times; (ii) the ratio of (a) the outstanding principal amount of the total senior convertible notes outstanding, accrued and unpaid interest thereon and accrued and unpaid late charges to (b) the Company's average market capitalization over the prior ten trading days, to not exceed 30% (except that such maximum percentage is 50% for the period from September 8, 2022 through March 5, 2023) (the "Debt to Market Cap Ratio Test"); and (iii) the Company's market capitalization to at no time be less than $75 million. (the "Market Cap Test" and, together with the Debt to Market Cap Ratio Test, the "Financial Tests"). From time to time from and after September 8, 2022, including as of December 31, 2022, the Company was not in compliance with the Financial Tests. As of March 12, 2023, the investor agreed to waive any such non-compliance during such aforementioned time periods, under the Senior Convertible Notes and the SPA.

The Company and the investor also entered into a waiver dated August 9, 2022 whereby the April 2022 Senior Convertible Note was amended to permit the Investor to convert up to $5.0 million of the face value principal of the April 2022 Senior Convertible Note at the then current conversion price as if the date of conversion were an Installment Date, i.e. a price per share of common stock equal to the lower of (i) the fixed conversion price then in effect (currently $5.00) and (ii) 82.5% of the average VWAP of the Company's common stock for each of the two trading days with the lowest VWAP of the Company's common stock during the ten consecutive trading day period ending and including the trading day immediately prior to the applicable conversion date, but in the case of clause (ii), not less than $0.18 per share. As contemplated by such amendment, in the year ended December 31, 2022, approximately $6,003 of principal repayments along with approximately $370 of interest expense thereon, were settled through the issuance of 7,189,358 shares of common stock of the Company, with such shares having a fair value of approximately $11,807 (with such fair value measured as the respective conversion date quoted closing price of the common stock of the Company). The conversions resulted in a debt extinguishment loss of $5.4 million in the year ended December 31, 2022. Subsequent to December 31, 2022, as of March 9, 2023, approximately $522 of principal repayments along with approximately $155 of interest expense thereon, were settled through the issuance of 1,852,261 shares of common stock of the Company, with such shares having a fair value of approximately $1,102 (with such fair value measured as the respective conversion date quoted closing price of the common stock of the Company).

The fair value and face value principal outstanding of the Senior Convertible Notes as of December 31, 2022 are as follows:

	Contractual Maturity Date	Stated Interest Rate	Conversion Price per Share	Face Value Principal Outstanding	Fair Value
April 2022 Senior Convertible Note	April 4, 2024	7.875%	$ 5.00	$ 21,497	$ 22,000
September 2022 Senior Convertible Note	September 6, 2024	7.875%	$ 5.00	$ 11,250	$ 11,650
Balance as of December 31, 2022				$ 32,747	$ 33,650

The Company did not have convertible debt outstanding at December 31, 2021. During the year ended December 31, 2021, the Company recognized debt extinguishment losses of approximately $3,715, in connection with repaying-in-full all remaining convertible notes outstanding at the time.

See Note 13, *Financial Instruments Fair Value Measurements*, for a further discussion of fair value assumptions.

Note 14 — Debt - continued

Lucid Diagnostics - Private Placement - Securities Purchase Agreement

Effective as of March 13, 2023, Lucid entered into a Securities Purchase Agreement ("Lucid SPA") with an accredited institutional investor ("Lucid Investor", "Lucid Lender", and /or "Lucid Holder"), pursuant to which Lucid agreed to sell, and the Lucid Investor agreed to purchase a Senior Secured Convertible Note with a face value principal of $11.1 million (the "March 2023 Lucid Senior Convertible Note"). The issuance of the March 2023 Lucid Senior Convertible Note is subject to customary closing conditions. As of the date hereof, the March 2023 Lucid Senior Convertible Note has not yet been issued.

Note 15 — Stock-Based Compensation

PAVmed Inc. 2014 Long-Term Incentive Equity Plan

The PAVmed Inc. 2014 Long-Term Incentive Equity Plan (the "PAVmed Inc. 2014 Equity Plan") is designed to enable PAVmed Inc. to offer employees, officers, directors, and consultants, as defined, an opportunity to acquire shares of common stock of PAVmed Inc. The types of awards that may be granted under the PAVmed Inc. 2014 Equity Plan include stock options, stock appreciation rights, restricted stock, and other stock-based awards subject to limitations under applicable law. All awards are subject to approval by the PAVmed Inc. board of directors.

A total of 16,352,807 shares of common stock of PAVmed Inc. are reserved for issuance under the PAVmed Inc. 2014 Equity Plan, with 2,563,843 shares available for grant as of December 31, 2022. The share reservation is not diminished by a total of 600,854 PAVmed Inc. stock options and restricted stock awards granted outside the PAVmed Inc. 2014 Equity Plan as of December 31, 2022. In January 2023, the number of shares available for grant was increased by 4,700,000 in accordance with the evergreen provisions of the plan.

PAVmed Inc. Stock Options

PAVmed Inc. stock options granted under the PAVmed Inc. 2014 Equity Plan and stock options granted outside such plan are summarized as follows:

	Number of Stock Options	Weighted Average Exercise Price	Remaining Contractual Term (Years)	Intrinsic Value[2]
Outstanding stock options at December 31, 2020	6,798,529	$ 2.55	7.3	$ 2,558
Granted[1]	2,900,000	$ 4.90		
Exercised	(621,164)	$ 1.58		
Forfeited	(357,167)	$ 2.82		
Outstanding stock options at December 31, 2021	8,720,198	$ 3.39	6.8	$ 3,516
Vested and exercisable stock options at December 31, 2021	6,228,106	$ 2.88	5.7	$ 3,245
Outstanding stock options at December 31, 2021	8,720,198	$ 3.39	6.8	$ 3,516
Granted[1]	4,804,350	$ 1.53		
Exercised	(299,999)	$ 1.01		
Forfeited	(1,655,894)	$ 3.14		
Outstanding stock options at December 31, 2022[3]	11,568,655	$ 2.71	7.4	$ —
Vested and exercisable stock options at December 31, 2022	7,233,965	$ 2.97	6.5	$ —

(1) Stock options granted under the PAVmed Inc. 2014 Equity Plan and those granted outside such plan generally vest ratably over twelve quarters, with the vesting commencing with the grant date quarter-end, and have a ten-year contractual term from date-of-grant.

(2) The intrinsic value is computed as the difference between the quoted price of the PAVmed Inc. common stock on each of December 31, 2022 and December 31, 2021 and the exercise price of the underlying PAVmed Inc. stock options, to the extent such quoted price is greater than the exercise price.

(3) The outstanding stock options presented in the table above, are inclusive of 500,854 stock options granted outside the PAVmed Inc. 2014 Equity Plan, as of December 31, 2022 and December 31, 2021.

Note 15 — Stock-Based Compensation - continued

Subsequent to December 31, 2022, in January 2023, the company granted 7,070,000 stock options with a weighted average exercise price of $0.48 for which will generally vest one-third after one year then ratably over the next eight quarters.

PAVmed Inc. Restricted Stock Awards

PAVmed Inc. restricted stock awards granted under the PAVmed Inc. 2014 Equity Plan and restricted stock awards granted outside such plan are summarized as follows:

	Number of Restricted Stock Awards		Weighted Average Grant Date Fair Value
Outstanding restricted stock awards as of December 31, 2020	1,416,666	$	1.72
Granted	400,000	$	4.50
Vested	(150,000)	$	2.04
Forfeited	—	$	—
Unvested restricted stock awards as of December 31, 2021[(1)]	1,666,666	$	2.36
Unvested restricted stock awards as of December 31, 2021	1,666,666	$	2.36
Granted	—		—
Vested	(541,666)		1.20
Forfeited	(150,000)		2.04
Unvested restricted stock awards as of December 31, 2022[(1)]	975,000	$	3.05

(1) The unvested restricted stock awards presented in the table above, are inclusive of 100,000 restricted stock awards granted outside the PAVmed Inc. 2014 Equity Plan as of December 31, 2022 and December 31, 2021.

Lucid Diagnostics Inc. 2018 Long-Term Incentive Equity Plan

The Lucid Diagnostics Inc. 2018 Long-Term Incentive Equity Plan ("Lucid Diagnostics Inc. 2018 Equity Plan") is separate and apart from the PAVmed Inc. 2014 Equity Plan discussed above. The Lucid Diagnostics Inc. 2018 Equity Plan is designed to enable Lucid Diagnostics Inc. to offer employees, officers, directors, and consultants, as defined, an opportunity to acquire shares of common stock of Lucid Diagnostics Inc. The types of awards that may be granted under the Lucid Diagnostics Inc. 2018 Equity Plan include stock options, stock appreciation rights, restricted stock, and other stock-based awards subject to limitations under applicable law. All awards are subject to approval by the Lucid Diagnostics Inc. board of directors.

A total of 9,144,000 shares of common stock of Lucid Diagnostics Inc. are reserved for issuance under the Lucid Diagnostics Inc. 2018 Equity Plan, with 3,821,139 shares available for grant as of December 31, 2022. The share reservation is not diminished by a total of 423,300 stock options and 50,000 restricted stock awards granted outside the Lucid Diagnostics Inc. 2018 Equity Plan, as of December 31, 2022. In January 2023, the number of shares available for grant was increased by 2,500,000 in accordance with the evergreen provisions of the plan.

Note 15 — Stock-Based Compensation - continued

Lucid Diagnostics Inc. Stock Options

Lucid Diagnostics Inc. stock options granted under the Lucid Diagnostics Inc. 2018 Equity Plan and stock options granted outside such plan are summarized as follows:

	Number of Stock Options	Weighted Average Exercise Price	Remaining Contractual Term (Years)	Intrinsic Value[2]
Outstanding stock options at December 31, 2020	1,399,242	$ 0.61	8.0	
Granted[1]	20,000	$ 9.08		
Exercised	—	$ —		
Forfeited	—	$ —		
Outstanding stock options at December 31, 2021	1,419,242	$ 0.73	7.0	$ 6,665
Vested and exercisable stock options at December 31, 2021	1,337,417	$ 0.61	7.0	$ 6,370
Outstanding stock options at December 31, 2021	1,419,242	$ 0.73	7.0	$ 6,665
Granted[1]	2,365,000	$ 3.68		
Exercised	(965,341)	$ 0.72		
Forfeited	(253,524)	$ 3.83		
Outstanding stock options at December 31, 2022[3]	2,565,377	$ 3.14	8.3	$ 428
Vested and exercisable stock options at December 31, 2022	1,119,006	$ 2.53	7.1	$ 428

(1) Stock options granted under the Lucid Diagnostics Inc. 2018 Equity Plan and those granted outside such plan generally vest ratably over twelve quarters, with the vesting commencing with the grant date quarter-end, and have a ten-year contractual term from date-of-grant.

(2) The intrinsic value is computed as the difference between the quoted price of the Lucid Diagnostics Inc. common stock on each of December 31, 2022 and December 31, 2021 and the exercise price of the underlying Lucid Diagnostics Inc. stock options, to the extent such quoted price is greater than the exercise price.

(3) The outstanding stock options presented in the table above, are inclusive of 423,300 stock options granted outside the Lucid Diagnostics Inc. 2018 Equity Plan, as of December 31, 2022 and December 31, 2021.

Subsequent to December 31, 2022, in January and February 2023, the company granted 2,672,500 stock options with a weighted average exercise price of $1.31 for which will generally vest one-third after one year then ratably over the next eight quarters.

Note 15 — Stock-Based Compensation - continued

Lucid Diagnostics Inc. Restricted Stock Awards

Lucid Diagnostics Inc. restricted stock awards granted under the Lucid Diagnostics Inc. 2018 Equity Plan and restricted stock awards granted outside such plan are summarized as follows:

	Number of Restricted Stock Awards	Weighted Average Grant Date Fair Value
Unvested restricted stock awards as of December 31, 2020	—	$ —
Granted	1,947,795	12.76
Vested	—	—
Forfeited	(7,055)	13.11
Unvested restricted stock awards as of December 31, 2021[(1)]	1,940,740	$ 12.76
Unvested restricted stock awards as of December 31, 2021	1,940,740	$ 12.76
Granted	320,000	4.53
Vested	(169,320)	13.48
Forfeited	—	—
Unvested restricted stock awards as of December 31, 2022[(1)]	2,091,420	$ 11.44

(1) The unvested restricted stock awards presented in the table above, are inclusive of 50,000 restricted stock awards granted outside the Lucid Diagnostics Inc. 2018 Equity Plan as of December 31, 2022 and December 31, 2021.

On January 7, 2022, 320,000 restricted stock awards were granted under the Lucid Diagnostics Inc 2018 Equity Plan, with such restricted stock awards having a single vesting date on January 7, 2025, and an aggregate grant date fair value of approximately $1.4 million, measured as the grant date closing price of Lucid Diagnostics Inc. common stock, with such aggregate estimated fair value recognized as stock-based compensation expense ratably on a straight-line basis over the vesting period, which is commensurate with the service period. The restricted stock awards are subject to forfeiture if the requisite service period is not completed.

Consolidated Stock-Based Compensation Expense

The consolidated stock-based compensation expense recognized by each of PAVmed Inc. and Lucid Diagnostics Inc. for both the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan, with respect to stock options and restricted stock awards as discussed above, for the periods indicated, was as follows:

	Years Ended December 31,	
	2022	**2021**
Cost of revenue	$ 16	$ —
Sales and marketing expenses	2,464	1,177
General and administrative expenses	16,001	12,799
Research and development expenses	1,051	1,033
Total stock-based compensation expense	$ 19,532	$ 15,009

Note 15 — Stock-Based Compensation - continued

Stock-Based Compensation Expense Recognized by Lucid Diagnostics Inc.

As noted, the consolidated stock-based compensation expense presented above is inclusive of stock-based compensation expense recognized by Lucid Diagnostics Inc., inclusive of each of: stock options granted under the PAVmed Inc. 2014 Equity Plan to the three physician inventors of the intellectual property underlying the CWRU License Agreement ("Physician Inventors") (as discussed above in Note 5, *Related Party Transactions*); and stock options and restricted stock awards granted to employees of PAVmed Inc. and non-employee consultants under the Lucid Diagnostics Inc. 2018 Equity Plan. The stock-based compensation expense recognized by Lucid Diagnostics Inc. for both the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan, with respect to stock options and restricted stock awards as discussed above, for the periods indicated, was as follows:

	Years Ended December 31,	
	2022	**2021**
Lucid Diagnostics Inc 2018 Equity Plan – cost of revenue	$ 13	$ —
Lucid Diagnostics Inc 2018 Equity Plan – sales and marketing expenses	968	8
Lucid Diagnostics Inc 2018 Equity Plan – general and administrative expenses	12,691	9,073
Lucid Diagnostics Inc 2018 Equity Plan – research and development expenses	187	66
PAVmed Inc 2014 Equity Plan - cost of revenue	3	—
PAVmed Inc 2014 Equity Plan - sales and marketing expenses	654	202
PAVmed Inc 2014 Equity Plan - general and administrative expenses	262	38
PAVmed Inc 2014 Equity Plan - research and development expenses	213	212
Total stock-based compensation expense – recognized by Lucid Diagnostics Inc	$ 14,991	$ 9,599

The consolidated unrecognized stock-based compensation expense and weighted average remaining requisite service period with respect to stock options and restricted stock awards issued under each of the PAVmed Inc. 2014 Equity Plan and the Lucid Diagnostics Inc. 2018 Equity Plan, as discussed above, is as follows:

	Unrecognized Expense	**Weighted Average Remaining Service Period (Years)**
PAVmed Inc. 2014 Equity Plan		
Stock Options	$ 7,136	1.9
Restricted Stock Awards	$ 933	0.7
Lucid Diagnostics Inc. 2018 Equity Plan		
Stock Options	$ 3,248	2.1
Restricted Stock Awards	$ 4,064	0.5

Note 15 — Stock-Based Compensation - continued

Stock-based compensation expense recognized with respect to stock options granted under the PAVmed Inc. 2014 Equity Plan was based on a weighted average estimated fair value of such stock options of $1.10 per share and $3.46 per share during the periods ended December 31, 2022 and 2021, respectively, calculated using the following weighted average Black-Scholes valuation model assumptions:

	Years Ended December 31,	
	2022	2021
Expected term of stock options (in years)	5.8	5.6
Expected stock price volatility	88.0%	76.0%
Risk free interest rate	2.2%	1.0%
Expected dividend yield	—%	—%

Stock-based compensation expense recognized with respect to stock options granted under the Lucid Diagnostics Inc. 2018 Equity Plan was based on a weighted average estimated fair value of such stock options of $2.30 per share and $5.13 per share during the periods ended December 31, 2022 and 2021, respectively, calculated using the following weighted average Black-Scholes valuation model assumptions:

	Years Ended December 31,	
	2022	2021
Expected term of stock options (in years)	5.6	5.7
Expected stock price volatility	71.0%	70.0%
Risk free interest rate	2.1%	1.3%
Expected dividend yield	—%	—%

PAVmed Inc. Employee Stock Purchase Plan ("ESPP")

A total of 194,240 shares and 203,480 shares of common stock of the Company were purchased for proceeds of approximately $218 and $304, on March 31, 2022 and 2021, respectively under the PAVmed Inc Employee Stock Purchase Plan ("PAVmed Inc ESPP"). A total of 191,698 shares and 31,112 shares of common stock of the Company were purchased for proceeds of approximately $140 and $131, on September 30, 2022 and 2021, respectively under the PAVmed Inc ESPP. The September 30, 2022 purchase was settled through the redeployment of treasury stock, and did not reduce the number of shares available-for-issue under the PAVmed Inc ESPP. The PAVmed Inc. ESPP has a total reservation of 1,750,000 shares of common stock of PAVmed Inc. of which 931,841 shares are available-for-issue as of December 31, 2022. In January 2023, the number of shares available-for-issue was increased by 250,000 in accordance with the evergreen provisions of the plan.

Lucid Diagnostics, Inc Employee Stock Purchase Plan ("ESPP")

The Lucid Diagnostics Inc Employee Stock Purchase Plan ("Lucid Diagnostics Inc ESPP"), initial six-month stock purchase period was April 1, 2022 to September 30, 2022. A total of 84,030 shares of common stock of Lucid Diagnostics Inc were purchased for proceeds of approximately $109 on September 30, 2022 under the Lucid Diagnostics Inc. ESPP. The Lucid Diagnostics Inc. ESPP has a total reservation of 500,000 shares of common stock of Lucid Diagnostics Inc. of which 415,970 shares are available-for-issue as of December 31, 2022. In January 2023, the number of shares available-for-issue was increased by 500,000 in accordance with the evergreen provisions of the plan.

Note 16 — Preferred Stock

As of December 31, 2022 and December 31, 2021, there were 1,205,759 and 1,113,919 shares of Series B Convertible Preferred Stock (classified in permanent equity) issued and outstanding, respectively.

Series B Convertible Preferred Stock Dividends

The Series B Convertible Preferred Stock is issued pursuant to the PAVmed Inc. Certificate of Designation of Preferences, Rights, and Limitations of Series B Convertible Preferred Stock ("Series B Convertible Preferred Stock Certificate of Designation"), has a par value of $0.001 per share, no voting rights, a stated value of $3.00 per share, and is immediately convertible upon its issuance. At the holders' election, a share of Series B Convertible Preferred Stock is convertible into a share of common stock of the Company at a common stock conversion exchange factor equal to a numerator and denominator of $3.00, with each such numerator and denominator not subject to further adjustment, except for the effect of stock dividends, stock splits or similar events affecting the Company's common stock. The Series B Convertible Preferred Stock shall not be redeemed for cash and under no circumstances shall the Company be required to net cash settle the Series B Convertible Preferred Stock.

The Series B Convertible Preferred Stock dividends are 8.0% per annum based on the $3.00 per share stated value of the Series B Convertible Preferred Stock, with such dividends compounded quarterly, accumulate, and are payable in arrears upon being declared by the Company's board of directors, with the dividends earned from April 1, 2018 through October 1, 2021 payable-in-kind ("PIK") by the issue of additional shares of Series B Convertible Preferred Stock; and after October 1, 2021, dividends may be settled, at the election of the discretion of the board of directors, through any combination of the issue of shares of Series B Convertible Preferred Stock, the issue shares of common stock of the Company, and /or cash payment.

During the year ended December 31, 2022, the Company's board-of-directors declared an aggregate of approximately $276 of Series B Convertible Preferred Stock dividends, earned as of December 31, 2021, March 31, 2022, June 30, 2022, and September 30, 2022, which have been settled by the issue of an additional aggregate 91,885 shares of Series B Convertible Preferred Stock.

During the year ended December 31, 2021, the Company's board-of-directors declared an aggregate of approximately $288 of Series B Convertible Preferred Stock dividends, earned as of December 31, 2020, March 31, 2021, June 30, 2021, and September 30, 2021, which have been settled by the issue of an additional aggregate 96,262 shares of Series B Convertible Preferred Stock.

Subsequent to December 31, 2022, in January 2023, the Company's board-of-directors declared a Series B Convertible Preferred Stock dividend earned as of December 31, 2022 and payable as of January 1, 2023, of approximately $72, to be settled by the issue of an additional 24,128 shares of Series B Convertible Preferred Stock (with such dividend not recognized as a dividend payable as of December 31, 2022, as the Company's board of directors had not declared such dividends payable as of such date).

Lucid Diagnostics - Series A Preferred Stock Offering

On March 7, 2023, Lucid entered into subscription agreements for the sale of 13,625 shares (the "*Lucid* Series A Preferred Stock"). Each share of the Lucid Series A Preferred Stock has a stated value of $1,000 and a conversion price of $1.394. The terms of the Lucid Series A Preferred Stock also include a one times preference on liquidation and a right to receive dividends equal to 20% of the number of shares of Lucid common stock into which such Lucid Series A Preferred Stock is convertible, payable on the one-year and two-year anniversary of the issuance date. The Lucid Series A Preferred Stock is a non-voting security, other than with respect to limited matters related to changes in terms of the Lucid Series A Preferred Stock. The aggregate gross proceeds from the sale of shares in such offering were $13.625 million.

Note 17 — Common Stock and Common Stock Purchase Warrants

Common Stock

In June 2022, the Company received shareholder approval to issue up to 250 million shares of its common stock, an increase of 100 million shares.

In February 2023, the Company distributed a proxy statement for a special meeting of shareholders to be held on March 31, 2023 (the "Special Meeting"), at which the Company will be seeking approval of an amendment to the Company's Certificate of Incorporation, to effect, at any time prior to the one-year anniversary date of the Special Meeting, (i) a reverse split of the Company's outstanding shares of common stock at a specific ratio, ranging from 1-for-5 to 1-for-15, to be determined by the board of directors of the Company in its sole discretion, and (ii) an associated reduction in the number of shares of common stock the Company is authorized to issue, from 250,000,000 shares to 50,000,000 shares.

During the year ended December 31, 2022, 299,999 shares of common stock of the Company were issued upon exercise of stock options for cash of approximately $302; and during the year ended December 31, 2022 a total of 385,938 shares of common stock of the Company were issued under the PAVmed Inc. Employee Stock Purchase Plan ("ESPP"). See Note 15, *Stock-Based Compensation*, for a discussion of each of the PAVmed Inc. 2014 Equity Plan and the PAVmed Inc. ESPP.

In the year ended December 31, 2022, 7,189,358 share of the Company's common stock were issued upon conversion, at the election of the holder, of the April 2022 Senior Convertible Note and the September 2022 Senior Convertible Note, for $6,003 face value principal repayments, along with approximately $370 of interest thereon, as discussed in Note 14, *Debt*.

In the year ended December 31, 2022, the Company sold 106,225 shares through their at-the-market equity facility for approximately $79. Subsequent to December 31, 2022, through March 9, 2023, we sold 1,081,997 shares through the at-the-market equity facility for approximately $0.6 million.

Common Stock Purchase Warrants

As of December 31, 2022 and December 31, 2021, Series Z Warrants outstanding totaled 11,937,450 and 11,937,455, respectively. A Series Z Warrant is exercisable to purchase one share of common stock of the Company at an exercise price of $1.60 per share, and expire April 30, 2024. During the year ended December 31, 2022, a total of 5 Series Z Warrants were exercised for cash at $1.60 per share, resultingin the issue of the same number of shares of common stock of the Company.

As of December 31, 2021, Series W Warrants outstanding totaled 377,873. The remaining 377,873 Series W Warrants expired unexercised as of January 29, 2022.

Note 18 — Noncontrolling Interest

The noncontrolling interest ("NCI") included as a component of consolidated total stockholders' equity is summarized for the periods indicated as follows:

	December 31, 2022	December 31, 2021
NCI – equity (deficit) – beginning of period	$ 17,752	$ (2,369)
Investment in Veris Health Inc.	—	6
Net loss attributable to NCI	(14,255)	(5,779)
Impact of subsidiary equity transactions	28	16,760
Lucid Diagnostics Inc. proceeds from Committed Equity Facility, net of deferred financing charges	1,767	—
Lucid Diagnostics Inc. issuance of common stock for settlement of APA-RDx installment payment	653	—
Lucid Diagnostics Inc. 2018 Equity Plan stock option exercise	695	—
Lucid Diagnostics Inc. Employee Stock Purchase Plan Purchase	109	—
Stock-based compensation expense - Lucid Diagnostics Inc. 2018 Equity Plan	13,859	9,134
Stock-based compensation expense - Veris Health Inc. 2021 Equity Plan	7	—
NCI – equity (deficit) – end of period	$ 20,615	$ 17,752

The consolidated NCI presented above is with respect to the Company's consolidated majority-owned subsidiaries as a component of consolidated total stockholders' equity as of December 31, 2022 and December 31, 2021; and the recognition of a net loss attributable to the NCI in the consolidated statement of operations for the periods beginning on the acquisition date of the respective majority-owned subsidiaries.

Lucid Diagnostics Inc.

As of December 31, 2022, there were 40,518,792 shares of common stock of Lucid Diagnostics Inc. issued and outstanding, of which, PAVmed Inc. holds 31,302,420 shares, representing a majority ownership equity interest and PAVmed Inc. has a controlling financial interest in Lucid Diagnostics Inc., and accordingly, Lucid Diagnostics Inc. is a consolidated majority-owned subsidiary of PAVmed Inc.

On March 28, 2022, Lucid Diagnostics, Inc. entered into a committed equity facility with an affiliate of Cantor Fitzgerald ("Cantor"). Under the terms of the committed equity facility, Cantor has committed to purchase up to $50 million of Lucid Diagnostics Inc. common stock from time to time at the request of Lucid Diagnostics Inc. While there are distinct differences, the facility is structured similarly to a traditional at-the-market equity facility, insofar as it allows the Company to raise primary equity capital on a periodic basis at prices based on the existing market price. As of December 31, 2022, under the committed equity facility, a total of 680,263 shares of common stock of Lucid Diagnostics Inc. were issued for proceeds of approximately $1,807.

In November 2022, Lucid Diagnostics also entered into an "at-the-market offering" for up to $6.5 million of its common stock that may be offered and sold under a Controlled Equity Offering Agreement between Lucid Diagnostics and Cantor Fitzgerald & Co. In the year ended December 31, 2022, there were no Lucid Diagnostics shares sold through their at-the-market equity facility. Subsequent to December 31, 2022, through March 9, 2023, Lucid Diagnostics sold 230,068 shares through its at-the-market equity facility for approximately $0.3 million.

Veris Health Inc.

As of December 31, 2022, there were 8,000,000 shares of common stock of Veris Health Inc. issued and outstanding, of which PAVmed Inc. holds an 80.44% majority-interest ownership and PAVmed Inc. has a controlling financial interest, with the remaining 19.56% minority-interest ownership held by an unrelated third-party. Accordingly, Veris Health Inc. is a consolidated majority-owned subsidiary of the Company, for which a provision of a noncontrolling interest (NCI) is included as a separate component of consolidated stockholders' equity in the consolidated balance sheet as of December 31, 2022 along with the recognition of a net loss attributable to the NCI in the consolidated statement of operations for the period of May 28, 2021 to December 31, 2021, upon its formation and contemporaneous acquisition of Oncodisc Inc.

Note 19 — Income Taxes

Income tax (benefit) expense for respective periods noted is as follows:

	Year Ended December 31,	
	2022	2021
Current		
Federal, State and Local	$ —	$ —
Deferred		
Federal	(24,265)	(9,528)
State and Local	11,124	(9,409)
Current and Deferred tax (benefit) expense	(13,141)	(18,937)
Less: Valuation allowance reserve	13,141	18,937
Income tax expense (benefit)	$ —	$ —

The reconciliation of the federal statutory income tax rate to the effective income tax rate for the respective period noted is as follows:

	Year Ended December 31,	
	2022	2021
U.S. federal statutory rate	21.0%	21.0%
U.S. state and local income taxes, net of federal benefit	6.6%	13.2%
Permanent differences	(1.0)%	(0.6)%
Tax credits	1.3%	—%
Revaluation of state deferred taxes	(15.2)%	0.1%
Valuation allowance	(12.7)%	(33.7)%
Effective tax rate	—%	—%

The tax effects of temporary differences which give rise to the net deferred tax assets for the respective period noted is as follows:

	Year Ended December 31,	
	2022	2021
Deferred Tax Assets		
Net operating loss	$ 37,032	$ 35,989
Debt issue costs	922	—
Stock-based compensation expense	11,105	7,091
Lease liabilities	836	—
Research and development expenditures	6,193	—
Research and development tax credit carryforwards	1,719	428
Accrued expenses	311	897
Section 195 deferred start-up costs	15	16
Depreciation & amortization	$ 221	$ —
Deferred tax assets	$ 58,354	$ 44,421
Deferred Tax Liabilities		
Operating lease right-of-use assets	(850)	—
Depreciation	—	(22)
Patent licenses	—	(36)
Deferred Tax Liabilities	$ (850)	$ (58)
Deferred tax assets, net of deferred tax liabilities	57,504	44,363
Less: valuation allowance	(57,504)	(44,363)
Deferred tax assets, net after valuation allowance	$ —	$ —

Note 19 — Income Taxes - continued

Deferred tax assets and deferred tax liabilities resulting from temporary differences are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect of the change in the tax rate is recognized as income or expense in the period the change in tax rate is enacted.

As required by FASB ASC Topic 740, Income Taxes, ("ASC 740), a "more-likely-than-not" criterion is applied when assessing the estimated realization of deferred tax assets through their utilization to reduce future taxable income, or with respect to a deferred tax asset for tax credit carryforward, to reduce future tax expense. A valuation allowance is established, when necessary, to reduce deferred tax assets, net of deferred tax liabilities, when the assessment indicates it is more-likely-than-not, the full or partial amount of the net deferred tax asset will not be realized. Accordingly, the Company evaluated the positive and negative evidence bearing upon the estimated realizability of the net deferred tax assets, and based on the Company's history of operating losses, concluded it is more-likely-than-not the deferred tax assets will not be realized, and therefore recognized a valuation allowance reserve equal to the full amount of the deferred tax assets, net of deferred tax liabilities, as of December 31, 2022 and 2021. As of December 31, 2022 and 2021, the deferred tax asset valuation allowance increased by $13,141 and $18,937, respectively.

The Company has total estimated federal net operating loss ("NOL") carryforward of approximately $158.4 million and $104.1 million as of December 31, 2022 and 2021, respectively, which is available to reduce future taxable income, of which approximately $13.8 million have statutory expiration dates commencing in 2037, and approximately $144.6 million which do not have a statutory expiration date. The Company has not yet conducted a formal analysis and the NOL carryforward may be subject-to limitation under U.S. Internal Revenue Code ("IRC") Section 382 (provided there was a greater than 50% ownership change, as computed under such IRC Section 382). The State and Local NOL carryforwards of approximately $157.8 million have statutory expiration dates commencing in 2037. The Company has total estimated research and development ("R&D") tax credit carryforward of approximately $1.7 million as of December 31, 2022 which are available to reduce future tax expense and have statutory expiration dates commencing in 2037.

The Company files income tax returns in the United States in federal and applicable state and local jurisdictions. The Company's tax filings for the years 2017 and thereafter each remain subject to examination by taxing authorities. The Company's policy is to record interest and penalties related to income taxes as part of its income tax provision. The Company has not recognized any penalties or interest related to its income tax provision.

In August 2022, the U.S. Congress passed the Inflation Reduction Act, which included a corporate minimum tax on book earnings of 15%, an excise tax on corporate share repurchases of 1%, and certain climate change and energy tax credit incentives. The adoption of a corporate minimum tax of 15% is not expected to impact PAVmed's effective tax rate. The excise tax of 1% on corporate share buybacks will not have an impact on the Company's effective tax rate.

Note 20 — Net Loss Per Share

The "Net loss per share - attributable to PAVmed Inc. - basic and diluted" and "Net loss per share - attributable to PAVmed Inc. common stockholders - basic and diluted" - for the respective periods indicated - is as follows:

	Years Ended December 31,	
	2022	2021
Numerator		
Net loss - before noncontrolling interest	$ (103,238)	$ (56,126)
Net loss attributable to noncontrolling interest	14,255	5,779
Net loss - as reported, attributable to PAVmed Inc.	$ (88,983)	$ (50,347)
Series B Convertible Preferred Stock dividends – earned	$ (281)	$ (283)
Net loss attributable to PAVmed Inc. common stockholders	$ (89,264)	$ (50,630)
Denominator		
Weighted average common shares outstanding, basic and diluted	89,076,078	77,515,767
Net loss per share		
Basic and diluted		
Net loss - as reported, attributable to PAVmed Inc.	$ (1.00)	$ (0.65)
Net loss attributable to PAVmed Inc. common stockholders	$ (1.00)	$ (0.65)

The common stock equivalents have been excluded from the computation of diluted weighted average shares outstanding as their inclusion would be anti-dilutive, are as follows:

The Series B Convertible Preferred Stock dividends earned as of each of the respective periods noted, are included in the calculation of basic and diluted net loss attributable to PAVmed Inc. common stockholders for each respective period presented. Notwithstanding, the Series B Convertible Preferred Stock dividends are recognized as a dividend payable only upon the dividend being declared payable by the Company's board of directors.

Basic weighted-average number of shares of common stock outstanding for the years ended December 31, 2022 and 2021 include the shares of the Company issued and outstanding during such periods, each on a weighted average basis. The basic weighted average number of shares of common stock outstanding excludes common stock equivalent incremental shares, while diluted weighted average number of shares outstanding includes such incremental shares. However, as the Company was in a loss position for all periods presented, basic and diluted weighted average shares outstanding are the same, as the inclusion of the incremental shares would be anti-dilutive. The common stock equivalents excluded from the computation of diluted weighted average shares outstanding are as follows:

	December 31,	
	2022	2021
Stock options and restricted stock awards	12,543,655	10,386,864
Series Z Warrants	11,937,450	11,937,455
Series W Warrants	—	377,873
Series B Convertible Preferred Stock	1,205,759	1,113,919
Total	25,686,864	23,816,111

The total stock options and restricted stock awards are inclusive of 500,854 stock options as of December 31, 2022 and 2021; and 100,000 restricted stock awards as of December 31, 2022 and 2021, granted outside the PAVmed Inc. 2014 Equity Plan.

Exhibit 4.1

DESCRIPTION OF THE REGISTRANT'S SECURITIES
REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

As of December 31, 2022, PAVmed Inc. ("PAVmed," the "Company" or "we," "us" or "our") had two classes of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"): (i) common stock, $0.001 par value per share; and (ii) Series Z warrants to purchase our common stock ("Series Z Warrants"). Each of the Company's securities registered under Section 12 of the Exchange Act are listed on The Nasdaq Stock Market LLC.

DESCRIPTION OF COMMON STOCK

In the discussion that follows, we have summarized selected provisions of our certificate of incorporation, bylaws, and the Delaware General Corporation Law (the "DGCL") relating to our common stock. This summary discussion is not complete, and is subject to the relevant provisions of Delaware law and is qualified in its entirety by reference to our certificate of incorporation and our bylaws. You should read the provisions of our certificate of incorporation and our bylaws as currently in effect for provisions that may be important to you.

Authorized Capital Stock

We are authorized to issue 20,000,000 shares of preferred stock, par value $0.001, and 250,000,000 shares of common stock, par value $0.001.

Series B Convertible Preferred Stock

On March 23, 2018, we filed the PAVmed Inc. Certificate of Designation of Preferences, Rights, and Limitations of Series B Convertible Preferred Stock ("PAVmed Inc. Series B Convertible Preferred Stock Certificate of Designation"). As of March 9, 2023, there were 1,229,887 shares of Series B Convertible Preferred Stock issued and outstanding.

Common Stock

As of December 31, 2022, there were 94,510,537 shares of our common stock issued and outstanding, and, as of such date, we also had issued and outstanding:

(i) Stock Options to purchase 11,568,655 shares of our common stock at a weighted average exercise price of $2.71 per share, with such total number inclusive of both stock options granted under the PAVmed Inc. 2014 Long-Term Incentive Equity Plan ("PAVmed Inc. 2014 Equity Plan") and stock options granted outside such plan; and 2,563,843 shares of our common stock reserved for issuance, but not subject to outstanding awards under the PAVmed Inc. 2014 Equity Plan; and 931,841 shares of our common stock reserved for issuance under the PAVmed Inc. Employee Stock Purchase Plan ("PAVmed Inc. ESPP");
(ii) Series Z Warrants to purchase 11,937,450 shares of our common stock at an exercise price of $1.60 per share;
(iii) Series B Convertible Preferred Stock of 1,205,759 shares, convertible into the same number of shares of our common stock;
(iv) 6,549,400 shares issuable upon conversion of our Senior Secured Convertible Notes, issued pursuant to that certain securities purchase agreement dated as of March 31, 2022 (the "Convertible Notes"), assuming for the purposes hereof that the principal and interest thereon is converted into shares of our common stock at the fixed conversion price of $5.00 per share. The number of shares of common stock to be issued under the Convertible Notes may be substantially greater than this amount, because the principal and interest thereon may be settled in shares of common stock, at a price per share based on the then current market price, but in any event at a price per share not less than floor price specified in the Convertible Notes;

In February 2023, the Company distributed a proxy statement for a special meeting of shareholders to be held on March 31, 2023 (the "Special Meeting"), at which the Company will be seeking approval of an amendment to the Company's Certificate of Incorporation, to effect, at any time prior to the one-year anniversary date of the Special Meeting, (i) a reverse split of the Company's outstanding shares of common stock at a specific ratio, ranging from 1-for-5 to 1-for-15, to be determined by the board of directors of the Company in its sole discretion, and (ii) an associated reduction in the number of shares of common stock the Company is authorized to issue, from 250,000,000 shares to 50,000,000 shares. If the reverse split is approved and implemented, the reverse split will require that proportionate adjustments be made to the conversion rate, the per share exercise price and the number of shares issuable upon the exercise or conversion of our outstanding derivative securities, based on the reverse split ratio determined by our board of directors. The determination of the specific ratio for the reverse split will not affect the number of shares of common stock we are authorized to issue after the reverse split. Regardless of the ratio, if the reverse split is approved and implemented, we will be authorized to issue 50,000,000 shares of common stock. The reverse split will have no effect on the number of outstanding shares of Series B Preferred Stock and no effect on the number of shares of preferred stock we are authorized to issue.

Common Stock

Holders of common stock are entitled to one vote per share on matters on which our stockholders vote. There are no cumulative voting rights. Subject to any preferential dividend rights of any outstanding shares of preferred stock, holders of common stock are entitled to receive dividends, if declared by our board of directors, out of funds that we may legally use to pay dividends. If we liquidate or dissolve, holders of common stock are entitled to share ratably in our assets once our debts and any liquidation preference owed to any then-outstanding preferred stockholders is paid. Our certificate of incorporation does not provide the common stock with any redemption, conversion or preemptive rights, and there are no sinking fund provisions with respect to our common stock. All shares of common stock that are outstanding are fully-paid and non-assessable.

Preferred Stock

Our certificate of incorporation authorizes the issuance of blank check preferred stock. Accordingly, our board of directors is empowered, without stockholder approval, to issue shares of preferred stock with dividend, liquidation, redemption, voting or other rights which could adversely affect the voting power or other rights of the holders of shares of our common stock. In addition, shares of preferred stock could be utilized as a method of discouraging, delaying or preventing a change in control of us.

Series B Convertible Preferred Stock

The Series B Convertible Preferred Stock is issued pursuant to the PAVmed Inc. Series B Convertible Preferred Stock Certificate of Designation, has a par value of $0.001 per share, no voting rights, a stated value of $3.00 per share, and is immediately convertible upon its issuance, as discussed herein below.

The Series B Convertible Preferred stock is senior to our common stock with respect to dividends and assets distributed in liquidation. In this regard, in the event of any voluntary or involuntary liquidation, dissolution or winding up of our company or Deemed Liquidation Event (as defined in the certificate of designations for the Series B Convertible Preferred Stock), the holders of shares of Series B Convertible Preferred Stock then outstanding shall be entitled to be paid out of our assets available for distribution to our stockholders, before any payment shall be made to the holders of our common stock by reason of their ownership thereof, an amount per share equal to the greater of (i) the stated value of the Series B Convertible Preferred Stock, plus any dividends accrued but unpaid thereon, or (ii) such amount per share as would have been payable had all shares of Series B Convertible Preferred Stock been converted into our common stock immediately prior to such liquidation, dissolution, winding up or Deemed Liquidation Event.

At the holders' election, a share of Series B Convertible Preferred Stock is convertible into a share of common stock of PAVmed Inc. at a common stock conversion exchange factor equal to a numerator and denominator of $3.00, with each such numerator and denominator not subject to further adjustment, except for the effect of stock dividends, stock splits or similar events affecting the Company's common stock. The Series B Convertible Preferred Stock shall not be redeemed for cash and under no circumstances shall the Company be required to net cash settle the Series B Convertible Preferred Stock.

The Series B Convertible Preferred Stock provides for dividends at a rate of 8% per annum of the stated value per share of the Series B Convertible Preferred Stock. Dividends are payable in arrears on January 1, April 1, July 1, and October 1, 2023. Dividends accrue and cumulate whether or not declared by our board of directors. All accumulated and unpaid dividends compound quarterly at the rate of 8% of the stated value per annum. Dividends are payable at our election in any combination of shares of Series B Convertible Preferred Stock, cash or shares of our common stock.

Dividends

We have not paid any cash dividends on our common stock to date. Any future decisions regarding dividends will be made by our board of directors. We do not anticipate paying dividends in the foreseeable future but expect to retain earnings to finance the growth of our business. Our board of directors has complete discretion on whether to pay dividends. Even if our board of directors decides to pay dividends, the form, frequency and amount will depend upon our future operations and earnings, capital requirements and surplus, general financial condition, contractual restrictions and other factors the board of directors may deem relevant.

Anti-Takeover Provisions

Provisions of the DGCL and our certificate of incorporation and bylaws could make it more difficult to acquire us by means of a tender offer, a proxy contest or otherwise, or to remove incumbent officers and directors. These provisions, summarized below, are expected to discourage certain types of coercive takeover practices and takeover bids that our board of directors may consider inadequate and to encourage persons seeking to acquire control of us to first negotiate with our board of directors. We believe that the benefits of increased protection of our ability to negotiate with the proponent of an unfriendly or unsolicited proposal to acquire or restructure us outweigh the disadvantages of discouraging takeover or acquisition proposals because, among other things, negotiation of these proposals could result in improved terms for our stockholders.

Delaware Anti-Takeover Statute. We are subject to Section 203 of the DGCL, an anti-takeover statute. In general, Section 203 of the DGCL prohibits a publicly-held Delaware corporation from engaging in a "business combination" with an "interested stockholder" for a period of three years following the time the person became an interested stockholder, unless the business combination or the acquisition of shares that resulted in a stockholder becoming an interested stockholder is approved in a prescribed manner. Generally, a "business combination" includes a merger, asset or stock sale, or other transaction resulting in a financial benefit to the interested stockholder. Generally, an "interested stockholder" is a person who, together with affiliates and associates, owns (or within three years prior to the determination of interested stockholder status did own) 15% or more of a corporation's voting stock. The existence of this provision would be expected to have an anti-takeover effect with respect to transactions not approved in advance by the board of directors, including discouraging attempts that might result in a premium over the market price for the shares of common stock held by stockholders.

Classified Board. Our board of directors is divided into three classes. The number of directors in each class is as nearly equal as possible. Directors elected to succeed those directors whose terms expire shall be elected for a term of office to expire at the third succeeding annual meeting of stockholders after their election. The existence of a classified board may extend the time required to make any change in control of the board when compared to a corporation with an unclassified board. It may take two annual meetings for our stockholders to effect a change in control of the board, because in general less than a majority of the members of the board will be elected at a given annual meeting. Because our board is classified and our certificate of incorporation does not otherwise provide, under Delaware law, our directors may only be removed for cause.

Vacancies in the Board of Directors. Our certificate of incorporation and bylaws provide that, subject to limitations, any vacancy occurring in our board of directors for any reason may be filled by a majority of the remaining members of our board of directors then in office, even if such majority is less than a quorum. Each director elected to fill a vacancy resulting from the death, resignation or removal of a director shall hold office until the expiration of the term of the director whose death, resignation or removal created the vacancy.

Advance Notice of Nominations and Shareholder Proposals. Our stockholders are required to provide advance notice and additional disclosures in order to nominate individuals for election to our board of directors or to propose matters that can be acted upon at a stockholders' meeting, which may discourage or deter a potential acquirer from conducting a solicitation of proxies to elect the acquirer's own slate of directors or otherwise attempting to obtain control of our company.

Special Meetings of Stockholders. Under our bylaws, special meetings of stockholders may be called by the directors, or the president or the chairman, and shall be called by the secretary at the request in writing of stockholders owning a majority in amount of the entire capital stock of the corporation issued and outstanding and entitled to vote.

No Cumulative Voting. The DGCL provides that stockholders are denied the right to cumulate votes in the election of directors unless our certificate of incorporation provides otherwise. Our certificate of incorporation does not provide for cumulative voting.

Listing

Our common stock is traded on the NASDAQ Capital Market under the symbols "PAVM."

Transfer Agent and Registrar

The transfer agent and registrar for our common stock is Continental Stock Transfer & Trust Company located at 1 State Street, 30th Floor, New York, NY 10004.

DESCRIPTION OF SERIES Z WARRANTS

The Series Z Warrants are issued under an amended and restated warrant agreement, dated June 8, 2018, between Continental Stock Transfer & Trust Company, as warrant agent, and us. In the discussion that follows, we have summarized selected provisions of the amended and restated warrant agreement. This summary is not complete. This discussion is subject to the provisions the amended and restated warrant agreement and is qualified in its entirety by reference to the amended and restated warrant agreement. You should read the amended and restated warrant agreement as currently in effect for provisions that may be important to you.

General

We currently have 11,937,450 Series Z Warrants outstanding, as of December 31, 2022. Each Series Z Warrant entitles the registered holder to purchase one share of our common stock at an exercise price of $1.60 per share, subject to adjustment as discussed below. Each warrant is currently exercisable and expires on April 30, 2024 at 5:00 p.m., New York City time.

Notwithstanding the foregoing, no Series Z Warrants will be exercisable for cash unless we have an effective and current registration statement covering the shares of common stock issuable upon exercise of the warrants and a current prospectus relating to such shares of common stock. If a registration statement covering the shares of common stock issuable upon exercise of the Series Z Warrants is not effective when the warrants become exercisable, warrant holders may, until such time as there is an effective registration statement and during any period when we shall have failed to maintain an effective registration statement, exercise the Series Z Warrants on a cashless basis in the same manner as if we called the warrants for redemption and required all holders to exercise their warrants on a "cashless basis." In such event, each holder would pay the exercise price by surrendering the warrants for that number of shares of common stock equal to the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the warrants, multiplied by the difference between the exercise price of the warrants and the "fair market value" (defined below) by (y) the fair market value. The "fair market value" for this purpose will mean the average daily volume weighted average price for our common stock for the 10 trading days ending on the trading day prior to the date of exercise.

Redemption

We may redeem the outstanding Series Z Warrants (other than those outstanding prior to this offering held by certain of our senior managers, our founders and members thereof), at our option, in whole or in part, at a price of $0.01 per warrant:

- at any time while the warrants are exercisable,
- upon a minimum of 30 days' prior written notice of redemption,
- if, and only if, the volume weighted average closing price of our common stock equals or exceeds $9.00 (subject to adjustment) for any 20 out of 30 consecutive trading days ending three business days before we send the notice of redemption, provided that the average daily trading volume in the stock during such 30-day period is at least 20,000 shares per day, and
- if, and only if, there is a current registration statement in effect with respect to the shares of common stock underlying such warrants.

The right to exercise will be forfeited unless the Series Z Warrants are exercised prior to the date specified in the notice of redemption. On and after the redemption date, a record holder of a Series Z Warrant will have no further rights except to receive the redemption price for such holder's warrant upon surrender of such warrant.

If we call the Series Z Warrants for redemption as described above, we will have the option to require all holders that wish to exercise warrants to do so on a "cashless basis." In such event, each holder would pay the exercise price by surrendering the warrants for that number of shares of common stock equal to the quotient obtained by dividing (x) the product of the number of shares of common stock underlying the warrants, multiplied by the difference between the exercise price of the warrants and the "fair market value" (defined below) by (y) the fair market value. In this case, the "fair market value" shall mean the average daily volume weighted average price the shares of common stock for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of warrants.

Exercise

The exercise price and number of shares of common stock issuable on exercise of the Series Z Warrants may be adjusted in certain circumstances including in the event of a share dividend, extraordinary dividend or our recapitalization, reorganization, merger or consolidation. However, the Series Z Warrants will not be adjusted for issuances of shares of common stock at a price below their respective exercise prices.

If a Fundamental Transaction (as defined in the amended and restated warrant agreement for the Series Z Warrants) is completed, then, upon any subsequent exercise of a Series Z Warrant, the holders of the Series Z Warrants shall have the right to receive, for each share of our common stock that would have been issuable upon exercise of a Series Z Warrant immediately prior to the occurrence of such Fundamental Transaction, at the option of each holder (without regard to the beneficial ownership limitation described below), the number of shares of common stock of the successor or acquiring corporation or of us, if we are the surviving corporation, and any additional consideration receivable as a result of such Fundamental Transaction by a holder of the number of shares of our common stock for which the Series Z Warrant is exercisable immediately prior to such Fundamental Transaction (without regard to the beneficial ownership limitation described below).

The Series Z Warrants may be exercised upon surrender of the warrant certificate on or prior to the expiration date at the offices of the warrant agent, with the exercise form on the reverse side of the warrant certificate completed and executed as indicated. Within two trading days following the exercise, the holder will pay in full the exercise price, by certified or official bank check payable to us, for the number of warrants being exercised. The warrant holders do not have the rights or privileges of holders of shares of common stock and any voting rights until they exercise their warrants.

Except as described above, no Series Z Warrants will be exercisable and we will not be obligated to issue shares of common stock unless at the time a holder seeks to exercise such warrant, a prospectus relating to the shares of common stock issuable upon exercise of the Series Z Warrants is current and the shares of common stock have been registered or qualified or deemed to be exempt under the securities laws of the state of residence of the holder of the warrants. Under the terms of the amended and restated warrant agreement, we have agreed to use our commercially reasonable best efforts to meet these conditions and to maintain a current prospectus relating to the shares of common stock issuable upon exercise of the warrants until the expiration of the warrants.

No fractional shares will be issued upon exercise of the Series Z Warrants. If, upon exercise of the warrants, a holder would be entitled to receive a fractional interest in a share, we will, upon exercise, round up to the nearest whole number the number of shares of common stock to be issued to the warrant holder.

We will not effect any exercise of a Series Z Warrant, and a holder shall not have the right to exercise any portion of a Series Z Warrant, to the extent that after giving effect to such issuance after exercise as set forth on the applicable subscription form, the holder (together with the holder's affiliates, and any other persons acting as a group together with the holder or any of the holder's affiliates), would beneficially own in excess of 4.99% or 9.99% (at the election of the holder) of our common stock outstanding.

Warrant Agreement

The Series Z Warrants are issued in registered form under an amended and restated warrant agreement between Continental Stock Transfer & Trust Company, as warrant agent, and us. The amended and restated warrant agreement provides that the terms of the Series Z Warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision, but requires the approval, by written consent or vote, of the holders of two-thirds of the then outstanding warrants in order to make any change that adversely affects the interests of the registered holders. Notwithstanding the foregoing, we may lower the exercise price or extend the duration of the Series Z Warrants without the consent of the holders.

Listing

Our Series Z Warrants are traded on the NASDAQ Capital Market under the symbols “PAVMZ.”

Warrant Agent and Registrar

The warrant agent and registrar for our Series Z Warrants is Continental Stock Transfer & Trust Company located at 1 State Street, 30th Floor, New York, NY 10004.

Exhibit 10.9

EMPLOYMENT AGREEMENT

THIS EMPLOYMENT AGREEMENT (the "Agreement") is entered into as of April 18. 2022 is entered into between Michael Gordon ("Executive"), and PAVmed Inc., a Delaware corporation having its principal office at One Grand Central Place, Suite 4600, New York, New York 10165 ("Company") to become effective immediately.

WHEREAS, the Company and the Executive desire to enter into this Agreement to set forth the terms and conditions of Executive's employment with the Company.

NOW, THEREFORE, in consideration of the premises and of the mutual covenants and agreements hereinafter set forth, the Company and the Executive hereby agree as follows:

1. Employment, Duties and Acceptance.

1.1 General. The Company hereby agrees to employ the Executive as its General Counsel and Corporate Secretary. All of Executive's powers and authority in any capacity shall at all times be subject to the direction and control of the Company's Chief Executive Officer ("CEO"). The Executive may be assigned such management and supervisory responsibilities and executive duties for the Company or any subsidiary of the Company, including serving as an executive officer and/or director of any subsidiary, as are consistent with Executive's status as General Counsel and Corporate Secretary.

1.2 Full-Time Position. Executive accepts such employment and agrees to devote his best efforts and full time to promote the business and affairs of the Company and its affiliated entities and shall be engaged in other business activities only to the extent that such activities do not materially interfere or conflict with his obligations to the Company hereunder. Nothing herein, other than Section 5.4 below, shall be construed as preventing Executive from making and supervising personal investments, or serving on civic, philanthropic, educational, or charitable boards or committees, or with the prior written consent of the Board, in its sole discretion, on either public or private corporate boards so long as such activities are not restricted under the Company's Code of Conduct and employment practices. Executive acknowledges and agrees that Schedule 1.2 attached hereto represents a complete list of corporate boards on which the Executive serves as of the effective date of this agreement. Notwithstanding any provision of this Section to the contrary, in no event shall the Executive invest in any business competitive with the Company or that would otherwise violate the provisions of Section 5.4 below.

1.3 Location. Executive will perform his duties in San Diego County, California or in such other location as may be mutually agreed by Executive and the Company. Executive shall undertake such travel, within or outside the United States, as is necessary to perform his duties hereunder.

2. Term. The initial term of this Agreement shall commence on May 2, 2022 ("Effective Date") and terminate on the third anniversary of the Effective Date (the "Initial Term") unless terminated earlier as provided in this Agreement. In addition, the term of this Agreement shall thereafter automatically renew for periods of one-year (the "Renewal Term") unless either party gives written notice to the other party at least 60 days prior to the end of the term or at least 60 days prior to any one-year renewal period, that the Agreement shall not be further extended. The period commencing on the Effective Date and ending on the date on which the term of the Executive's employment under the Agreement terminates is referred to herein as the "Term".

3. Compensation and Benefits.

3.1 Salary. The Company shall pay to Executive a salary ("Base Salary") at the annual rate of $450,000. Executive's compensation shall be paid in equal, periodic installments in accordance with the Company's normal payroll procedures. The Executive's base salary shall be reviewed periodically by the Board or Committee (as defined below) pursuant to the Board or Committee's normal performance review policies for senior level executives.

3.2 Bonus. In addition to the Base Salary, Executive shall be eligible to receive a discretionary performance bonus ("Bonus") with a target of fifty percent (50%) of the Executive's Base Salary in effect as of December 31st of the preceding year based on Executive's and the Company's performance over the preceding year. The payment and amount of any Bonus shall be in the sole discretion of the Board or the Compensation Committee of the Board (the "Committee").

3.3 Equity Awards. Subject to approval by the Committee, Executive will be granted an option (the "Option") to acquire 400,000 shares of the Company's common stock, at an exercise price per share basis equal to the closing price of the Company's common stock as of the date immediately prior to the date of grant (the "Grant Date"). Such option will be subject to the terms and conditions of the Company's 2014 Long-Term Incentive Equity Plan and a stock option agreement in the Company's standard form (pursuant to which the Option shall be granted).

3.4 Benefits. Executive shall be entitled to such medical, life, disability and other benefits as are generally afforded to other executives of the Company, subject to applicable waiting periods and other conditions, as well as participation in all other company-wide employee benefits, including a defined contribution pension plan and 401(k) plan, as may be made available generally to executive employees from time to time. The Executive shall be eligible to participate in the Company's annual and long-term incentive plans and programs in accordance with the terms of such plans and programs as in effect and afforded to other senior executives of the Company at levels determined by the Board (or committee of the Board).

3.5 Vacation. Executive shall be entitled to twenty (20) days of paid vacation in each year during the Term and to a reasonable number of other days off for religious and personal reasons in accordance with customary Company policy.

3.6 Expenses. The Company shall pay or reimburse Executive for all transportation, hotel and other expenses reasonably incurred by Executive on business trips and for all other ordinary and reasonable out-of-pocket expenses actually incurred by him in the conduct of the business of the Company, including expenses relating to his laptop, cell phone or other similar devices, against itemized vouchers submitted with respect to any such expenses and approved in accordance with customary procedures.

4. Termination.

4.1 Death. If Executive dies during the Term, Executive's employment hereunder shall terminate and the Company shall pay to Executive's estate the amount set forth in Section 4.6(a).

4.2 Disability. The Company, by written notice to Executive, may terminate Executive's employment hereunder if Executive shall fail because of illness or incapacity to render services of the character contemplated by this Agreement for one hundred eighty (180) days. Upon such termination, the Company shall pay to Executive the amount set forth in Section 4.6(a).

4.3 By Company for "Cause" or By the Executive Without "Good Reason". The Company, by written notice to Executive, may terminate Executive's employment hereunder for "Cause." As used herein, "Cause" shall mean: (a) the refusal or failure by Executive to carry out any lawful direction of the Board which are of a material nature and consistent with his status as General Counsel (or whichever positions Executive holds at such time), or the refusal or failure by Executive to perform a material part of Executive's duties hereunder; (b) the commission by Executive of a material breach of any of the provisions of this Agreement; (c) fraud or dishonest action by Executive in his relations with the Company or any of its subsidiaries or affiliates ("dishonest" for these purposes shall mean Executive's knowingly or recklessly making of a material misstatement or omission for his personal benefit); or (d) the conviction of Executive of a felony under federal or state law. Notwithstanding the foregoing, no "Cause" for termination shall be deemed to exist with respect to Executive's acts described in clauses (a) or (b) above, unless the Company shall have given written notice to Executive within a period not to exceed thirty (30) calendar days of the initial existence of the occurrence, specifying the "Cause" with reasonable particularity and, within thirty (30) calendar days after such notice, Executive shall not have cured or eliminated the problem or thing giving rise to such "Cause;" provided, however, no more than two cure periods need be provided during any twelve- month period. Upon such termination, the Company shall pay to Executive the amount set forth in Section 4.6(b). The Company shall also pay such amount to Executive upon his termination of employment without "Good Reason" (as defined below), which Executive shall have the right to do on at least thirty (30) days written notice to the Company.

4.4 By Executive for "Good Reason". The Executive, by written notice to the Company, may terminate Executive's employment hereunder if a "Good Reason" exists. For purposes of this Agreement, "Good Reason" shall mean the occurrence of any of the following circumstances without the Executive's prior written consent: (a) a substantial and material adverse change in the nature of Executive's title, duties or responsibilities with the Company (other than as a director of the Company) that represents a demotion from his title, duties or responsibilities as in effect immediately prior to such change (such change, a "Demotion"); (b) material breach of this Agreement by the Company; (c) a failure by the Company to make any payment to Executive when due, unless the payment is not material and is being contested by the Company, in good faith; (d) a change of the principal office or work place assigned to the Executive to a location more than 35 miles distant from its location immediately prior to such change; (e) a material reduction of the Executive's Base Salary or bonus opportunity, unless pursuant to a reduction in such items applicable proportionally to all senior management and board members; or (f) a liquidation, bankruptcy or receivership of the Company. Notwithstanding the foregoing, no "Good Reason" shall be deemed to exist with respect to the Company's acts described in clauses (a), (b), (c), (d) or (e) above, unless Executive shall have given written notice to the Company within a period not to exceed thirty (30) calendar days of the initial existence of the occurrence, specifying the "Good Reason" with reasonable particularity and, within thirty (30) calendar days after such notice, the Company shall not have cured or eliminated the problem or thing giving rise to such "Good Reason"; provided, however, that no more than two cure periods shall be provided during any twelve-month period of a breach of clauses (a), (b), (c), (d), or (e) above. Upon such termination, the Company shall pay to Executive the amount set forth in Section 4.6(c).

4.5 By Company Without "Cause". The Company may terminate Executive's employment hereunder without "Cause" by giving at least thirty (30) days written notice to Executive. Upon such termination, the Company shall pay to Executive the amount set forth in Section 4.6(c).

4.6 Compensation Upon Termination. In the event that Executive's employment hereunder is terminated, the Company shall pay to Executive the following compensation:

(a) Payment Upon Death or Disability. In the event that Executive's employment is terminated pursuant to Sections 4.1 or 4.2, the Company shall no longer be under any obligation to Executive or his legal representatives pursuant to this Agreement except for: (i) the Base Salary due Executive pursuant to Section 3.1 hereof through the date of termination; (ii) any Bonus which would have become payable under Section 3.2 for the year in which the employment was terminated prorated by multiplying the full amount of the Bonus by a fraction, the numerator of which is the number of "full calendar months" worked by Executive during the year of termination and the denominator of which is 12 (a "full calendar month" is a month in which the Executive worked at least two weeks); (iii) all earned and previously approved but unpaid Bonuses for any year prior to the year of termination; (iv) all valid expense reimbursements, and (v) all unused vacation pay through the date of termination required by law to be paid.

(b) Payment Upon Termination by the Company For "Cause" or by the Executive Without Good Reason. In the event that the Company terminates Executive's employment hereunder pursuant to Section 4.3, the Company shall have no further obligations to the Executive hereunder, except for: (i) the Base Salary due Executive pursuant to Section 3.1 hereof through the date of termination (ii) all valid expense reimbursements and (iii) all unused vacation pay through the date of termination required by law to be paid.

(c) Payment Upon Termination by Company Without Cause or by Executive for Good Reason. In the event that Executive's employment is terminated pursuant to Sections 4.4 or 4.5, the Company shall have no further obligations to Executive hereunder except for: (i) the Base Salary (at the rate in effect immediately before Executive's termination or resignation, as applicable) due Executive pursuant to Section 3.1 hereof until the later of the two- year anniversary of the Effective Date and the date that is twelve (12) months from the date of termination; (ii) any Bonus which would have become payable under Section 3.2 for the year in which the employment was terminated prorated by multiplying the full amount of the Bonus by a fraction, the numerator of which is the number of "full calendar months" worked by Executive during the year of termination and the denominator of which is 12 (a "full calendar month" is a month in which the Executive worked at least two weeks); (iii) the Base Salary due Executive pursuant to Section 3.1 hereof through the date of termination; (iv) all valid expense reimbursements; (v) to the extent the Executive timely elects to receive continuation coverage pursuant to the Consolidated Omnibus Budget Reconciliation Act of 1985, as amended ("COBRA"), the Company shall pay or reimburse the Executive, on a monthly basis, an amount equal to the full monthly premium for such coverage, from the date of termination until the earlier of (a) the date twelve (12) months following the date of termination, and (B) the date of Executive becoming eligible for coverage under a new employer's health insurance plan (the COBRA health care continuation coverage period under Section 4980B of the Internal Revenue Code of 1986, as amended (the "Code") shall run concurrently with the foregoing period); and (vi) all unused vacation pay through the date of termination required by law to be paid, subject, in the case of clause (i) and (ii), to Executive's compliance with Section 5 and to Executive's execution of a release of claims in favor of the Company, its affiliates and their respective officers and directors in a form provided by the Company and such release becoming effective,.

(d) Executive shall have no duty to mitigate awards paid or payable to him pursuant to this Agreement, and any compensation paid or payable to Executive from sources other than the Company will not offset or terminate the Company's obligation to pay to Executive the full amounts pursuant to this Agreement.

5. Protection of Confidential Information; Non-Competition.

5.1 Acknowledgment. Executive acknowledges that:

(a) As a result of his employment with the Company, Executive will obtain secret and confidential information concerning the business of the Company and its subsidiaries (referred to collectively in this Section 5 as the "Company"), including, without limitation, financial information, proprietary rights, trade secrets and "know-how," customers and sources ("Confidential Information").

(b) The Company will suffer substantial damage which will be difficult to compute if, during the period of his employment with the Company or thereafter, Executive should enter a business competitive with the Company or divulge Confidential Information.

(c) The provisions of this Agreement are reasonable and necessary for the protection of the business of the Company.

5.2 Confidentiality. Executive agrees that he will not at any time, during the Term or thereafter, divulge to any person or entity any Confidential Information obtained or learned by him as a result of his employment with the Company, except (i) in the course of performing his duties hereunder, (ii) with the Company's prior written consent; (iii) to the extent that any such information is in the public domain other than as a result of Executive's breach of any of his obligations hereunder; or (iv) where required to be disclosed by law, regulation, stock exchange rule, court order, subpoena or other government process. If Executive shall be required to make disclosure pursuant to the provisions of clause (iv) of the preceding sentence, Executive promptly, but in no event more than 48 hours after learning of such subpoena, court order, or other government process, shall notify, confirmed by mail, the Company and, at the Company's expense, Executive shall: (a) take all reasonably necessary and lawful steps required by the Company to defend against the enforcement of such subpoena, court order or other government process, and (b) permit the Company to intervene and participate with counsel of its choice in any proceeding relating to the enforcement thereof.

5.3 Documents. Upon termination of his employment with the Company, Executive will promptly deliver to the Company all memoranda, notes, records, reports, manuals, drawings, blueprints and other documents (and all copies thereof) relating to the business of the Company and all property associated therewith, which he may then possess or have under his control; provided, however, that Executive shall be entitled to retain copies of such documents reasonably necessary to document his financial relationship with the Company.

5.4 Non-competition. During the Term and for a period of one (1) year thereafter, or two (2) years thereafter in the event of a Change of Control, Executive, without the prior written permission of the Company, shall not, anywhere in the world, (i) be employed by, or render any services to, any person, firm or corporation engaged in the medical device industry (or any other business) which is directly in competition with any "material" business conducted or proposed to be conducted by the Company or any of its subsidiaries at the time of termination ("Competitive Business"); (ii) engage in any Competitive Business for his own account; (iii) be associated with or interested in any Competitive Business as an individual, partner, shareholder, creditor, director, officer, principal, agent, employee, trustee, consultant, advisor or in any other relationship or capacity; (iv) employ or retain, or have or cause any other person or entity to employ or retain, any person who was employed or retained by the Company while Executive was employed by the Company; or (v) solicit, interfere with, or endeavor to entice away from the Company, for the benefit of a Competitive Business, any of its customers or other persons with whom the Company has a contractual relationship. Notwithstanding the foregoing, nothing in this Agreement shall preclude Executive from investing his personal assets in any manner he chooses, provided, however, that Executive may not, during the period referred to in this Section 5.4, own more than 4.9% of the equity securities of any Competitive Business.

5.5 Injunctive Relief. If Executive commits a breach, or threatens to commit a breach, of any of the provisions of Sections 5.2 or 5.4, the Company shall have the right and remedy to seek to have the provisions of this Agreement specifically enforced by any court having equity jurisdiction, it being acknowledged and agreed by Executive that the services being rendered hereunder to the Company are of a special, unique and extraordinary character and that any such breach or threatened breach will cause irreparable injury to the Company and that money damages will not provide an adequate remedy to the Company. The rights and remedies enumerated in this Section 5.5 shall be in addition to, and not in lieu of, any other rights and remedies available to the Company under law or equity. In connection with any legal action or proceeding arising out of or relating to this Agreement, the prevailing party in such action or proceeding shall be entitled to be reimbursed by the other party for the reasonable attorneys' fees and costs incurred by the prevailing party.

5.6 Modification. If any provision of Sections 5.2 or 5.4 is held to be unenforceable because of the scope, duration or area of its applicability, the tribunal making such determination shall have the power to modify such scope, duration, or area, or all of them, and such provision or provisions shall then be applicable in such modified form.

5.7 Survival. The provisions of this Section 5 shall survive the termination of employment under this Agreement for any reason.

6. Miscellaneous Provisions.

6.1 Notices. All notices provided for in this Agreement shall be in writing, and shall be deemed to have been duly given when (i) delivered personally to the party to receive the same, or (ii) when mailed first class postage prepaid, by certified mail, return receipt requested, addressed to the party to receive the same at his or its address set forth below, or such other address as the party to receive the same shall have specified by written notice given in the manner provided for in this Section 6.1, or sent via email or facsimile.

If to Executive, to his address as set forth in the Company's books and records.

If to the Company:

PAVmed Inc.
One Grand Central Place, Suite 4600
New York, New York 10165
Attn: Lishan Aklog, M.D.
Email: la@pavmed.com

6.2 Entire Agreement; Waiver. This Agreement, the Option and the separate indemnification agreement being entered simultaneously herewith sets forth the entire agreement of the parties relating to the employment of Executive and is intended to supersede all prior negotiations, understandings and agreements. No provisions of this Agreement may be waived or changed except by a writing by the party against whom such waiver or change is sought to be enforced. The failure of any party to require performance of any provision hereof or thereof shall in no manner affect the right at a later time to enforce such provision.

6.3 Governing Law. All questions with respect to the construction of this Agreement, and the rights and obligations of the parties hereunder, shall be determined in accordance with the law of the State of New York applicable to agreements made and to be performed entirely in New York.

6.4 Binding Effect; Nonassignability. This Agreement shall inure to the benefit of and be binding upon the successors and assigns of the Company. This Agreement shall not be assignable by Executive, but shall inure to the benefit of and be binding upon Executive's heirs and legal representatives.

6.5 Severability. Should any provision of this Agreement become legally unenforceable, no other provision of this Agreement shall be affected, and this Agreement shall continue as if the Agreement had been executed absent the unenforceable provision.

6.6 Section 409A. This Agreement is intended to comply with the provisions of Section 409A of the Internal Revenue Code ("Section 409A"). To the extent that any payments and/or benefits provided hereunder are not considered compliant with Section 409A, the parties agree that the Company shall take all actions necessary to make such payments and/or benefits become compliant.

7. Arbitration; Expenses. In the event of any dispute under the provisions of this Agreement, other than a dispute in which the primary relief sought is an equitable remedy such as an injunction, the parties shall be required to have the dispute, controversy or claim settled by arbitration in the non-moving parties jurisdiction in accordance with the Employment Arbitration Rules and Mediation Procedures then in effect of the American Arbitration Association, before an arbitrator agreed to by both parties. If the parties cannot agree upon the choice of arbitrator, the Company and the Executive will each choose an arbitrator. The two arbitrators will then select a third arbitrator who will serve as the actual arbitrator for the dispute, controversy or claim. Any award entered by the arbitrator shall be final, binding and nonappealable and judgment may be entered thereon by either party in accordance with applicable law in any court of competent jurisdiction. This arbitration provision shall be specifically enforceable. The arbitrator shall have no authority to modify any provision of this Agreement or to award a remedy for a dispute involving this Agreement other than a benefit specifically provided under or by virtue of the Agreement. Each party shall be responsible for its own expenses relating to the conduct of the arbitration (including reasonable attorneys' fees and expenses) and shall share the fees of the American Arbitration Association.

8. Attorneys' Fees. Except as provided in Section 7 above, in any action at law or in equity to enforce or construe any provisions or rights under this Agreement, the unsuccessful party or parties to such litigation, as determined by the courts pursuant to a final judgment or decree, shall pay the successful party or parties all costs, expenses, and reasonable attorneys' fees incurred by such successful party or parties (including, without limitation, such costs, expenses, and fees on any appeals), and if such successful party or parties shall recover judgment in any such action or proceedings, such costs, expenses, and attorneys' fees shall be included as part of such judgment.

[Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed this Agreement on the date first above written.

PAVMED INC.

By: _____
Name: Lishan Aklog, M.D.
Title: Chairman and CEO

By: _____
Name: Michael Gordon

Schedule 1.2. Schedule of Consultancy, Advisory, or Board of Directors

Alpha Chi Alpha (Dartmouth College) Alumni Association

Exhibit 10.12

PAVMED INC.
2014 LONG-TERM INCENTIVE EQUITY PLAN
STOCK OPTION AGREEMENT

THIS STOCK OPTION AGREEMENT is made as of the Grant Date by and between PAVmed Inc., a Delaware corporation (the "Company"), and Grantee.

WHEREAS, pursuant to the terms and conditions of the Company's 2014 Long-Term Incentive Equity Plan (the "Plan"), the Compensation Committee (the "Committee") of the Board of Directors of the Company (the "Board") authorized the grant to the Grantee of an option (the "Option") to purchase up to the number of shares of the authorized but unissued common stock of the Company, $.001 par value ("Common Stock") set forth in the table below opposite "Number of Shares Subject to Option" (the "Option Shares"), conditioned upon the Grantee's acceptance thereof upon the terms and conditions set forth in this Agreement and subject to the terms of the Plan (capitalized terms used herein and not otherwise defined have the meanings set forth in the Plan); and

WHEREAS, the Grantee desires to acquire the Option on the terms and conditions set forth in this Agreement and subject to the terms of the Plan;

Grantee:

Grant Date:

Number of Shares Subject to Option:

Exercise Price (Per Share):

Expiration Date:

Vest Schedule: See Vest Schedule online on etrade.com[1]

Type of Grant:

[1] As shown on the Vest Schedule at etrade.com, the Option will vest one-third on or about the one-year anniversary of the most recent quarter end as of the Grant Date, with the remaining portion of the Option vesting in eight, equal quarterly installments.

IT IS AGREED:

1. Grant of Stock Option. The Company hereby grants to the Grantee the right and option to purchase all or any part of the Option Shares on the terms and conditions set forth herein and subject to the provisions of the Plan.

2. Non-Incentive Stock Option. The Option represented hereby is not intended to be an Option that qualifies as an "Incentive Stock Option" under Section 422 of the Internal Revenue Code of 1986, as amended.

3. Exercise Price. The exercise price (the "Exercise Price") of the Option is defined as the closing price of the Company's common stock on Grant Date, subject to adjustment as hereinafter provided.

4. Effect of Termination of Employment.

4.1. Termination Due to Death. If Grantee's employment by the Company terminates by reason of death, the portion of the Option, if any, that was exercisable as of the date of death may thereafter be exercised by the legal representative of the estate or by the legatee of the Grantee under the will of the Grantee, for a period of one year from the date of such death or until the expiration of the Exercise Period, whichever period is shorter. The portion of the Option, if any, that was not exercisable as of the date of death shall immediately terminate upon death.

4.2. Termination Due to Disability. If Grantee's employment by the Company terminates by reason of Disability, the portion of the Option, if any, that was exercisable as of the date of termination of employment may thereafter be exercised by the Grantee or legal representative for a period of one year from the date of such termination or until the expiration of the Exercise Period, whichever period is shorter. The portion of the Option, if any, that was not exercisable as of the date of Disability shall immediately terminate upon disability.

4.3. Termination Due to Retirement. If Grantee's employment by the Company terminates due to Normal Retirement, then the portion of the Option that was exercisable as of the date of termination of employment may be exercised for a period of one year from the date of such termination or until the expiration of the Exercise Period, whichever is shorter. The portion of the Option not yet exercisable on the date of termination of employment shall immediately expire.

4.4. Termination by the Company Without Cause or by the Grantee. If Grantee's employment is terminated by the Company without "Cause" or by the Grantee, then the portion of the Option that was exercisable as of the date of termination of employment may be exercised for a period of three months from the date of such termination or until the expiration of the Exercise Period, whichever is shorter. The portion of the Option not yet exercisable on the date of termination of employment shall immediately expire.

4.4.1. As used herein, "Cause" shall mean: (a) the refusal or failure by Grantee to carry out specific directions of the Grantee's supervisor which are of a material nature and consistent with Grantee's position at the Company; (b) the commission by Grantee of a material breach of any of the provisions of any agreement with the Company or of any written policies or procedures of the Company; (c) fraud or dishonest action by Grantee in Grantee's relations with the Company or any of its subsidiaries or affiliates ("dishonest" for these purposes shall mean Employees knowingly or recklessly making a material misstatement or omission for her personal benefit); or (d) the conviction of Grantee of a felony under federal or state law. Notwithstanding the foregoing, no "Cause" shall be deemed to exist with respect to Grantee's acts described in clauses (a) or (b) above, unless the Company shall have given written notice to Grantee within a period not to exceed ten (10) calendar days of the initial existence of the occurrence, specifying the "Cause" with reasonable particularity and, within thirty (30) calendar days after such notice, Grantee shall not have cured or eliminated the problem or thing giving rise to such "Cause"; provided, however, no more than two cure periods need be provided during any twelve-month period.

4.5. Change of Control. If a Change of Control (as defined in the Company's form of Indemnification Agreement in use as of the date hereof) occurs upon or prior to a termination of Grantee's employment, then upon termination of Grantee's employment following such event (other than a termination by the Company for Cause), the Option immediately shall become exercisable as to all the Option Shares and may be exercised for a period of three months (or in the case of the death, Disability or Normal Retirement of Grantee, one year) from the date of such termination or until the expiration of the Exercise Period, whichever is shorter.

4.6. Other Termination.

4.6.1. If Grantee's employment is terminated for any reason other than (i) death, (ii) Disability, (iii) Normal Retirement, (iv) without Cause by the Company or (v) by the Grantee, the Option shall expire on the date of termination of employment.

4.6.2. In the event the Grantee's employment is terminated by the Company for Cause, the Committee, in its sole discretion, may annul any award granted hereunder and require the Grantee to return to the Company the economic benefit of any Option Shares purchased hereunder by the Grantee within the 6 month period prior to the date of termination. In such event, the Grantee hereby agrees to remit to the Company, in cash, an amount equal to the difference between the Fair Market Value of the Option Shares on the date of termination (or, if higher, the sales price of such Shares if the Option Shares were sold during such 6 month period) and the Exercise Price of such Shares.

4.6.3. Competing With the Company. If Grantee's employment with the Company or a Subsidiary is terminated for any reason whatsoever and within 12 months after the date thereof such Grantee either (i) accepts employment with any competitor of, or otherwise engages in competition with, the Company or any of its Subsidiaries, (ii) solicits any customers or employees of the Company or any of its Subsidiaries to do business with or render services to the Holder or any business with which the Grantee becomes affiliated or to which the Grantee renders services or (iii) uses or discloses to anyone outside the Company any confidential information or material of the Company or any of its Subsidiaries in violation of the Company's policies or any agreement between the Grantee and the Company or any of its Subsidiaries, the Committee, in its sole discretion, may require the Grantee to return to the Company the economic value of any award that was realized or obtained by such Grantee at any time during the period beginning on the date that is 6 months prior to the date such Grantee's employment is terminated; provided, however, that if Grantee is a resident of the State of California, such right must be exercised by the Company for cash within six months after the date of termination of Grantee's service to the Company or within six months after exercise of the Option, whichever is later. In such event, Grantee agrees to remit the economic value to the Company in accordance with Section 4.6.2.

5. Withholding Tax. Not later than the date as of which an amount first becomes includible in the gross income of the Grantee for Federal income tax purposes with respect to the Option, the Grantee shall pay to the Company, or make arrangements satisfactory to the Committee regarding the payment of, any Federal, state and local taxes of any kind required by law to be withheld or paid with respect to such amount ("Withholding Tax"). The obligations of the Company under the Plan and pursuant to this Agreement shall be conditional upon such payment or arrangements with the Company and the Company shall, to the extent permitted by law, have the right to deduct any Withholding Taxes from any payment of any kind otherwise due to the Grantee from the Company.

6. Adjustments. In the event of any change in the shares of Common Stock of the Company as a whole occurring as the result of a common stock split, or reverse split, common stock dividend payable on shares of Common Stock, combination or exchange of shares, or other extraordinary or unusual event occurring after the grant of the Option, the Committee shall determine, in its sole discretion, whether such change equitably requires an adjustment in the terms of this Option or the aggregate number of shares reserved for issuance under the Plan. Any such adjustments will be made by the Committee, whose determination will be final, binding and conclusive.

7. Method of Exercise.

7.1. Notice to the Company. The Option shall be exercised in whole or in part by written notice in substantially the form attached hereto as Exhibit A directed to the Company at its principal place of business accompanied by full payment as hereinafter provided of the exercise price for the number of Option Shares specified in the notice and of the Withholding Taxes, if any.

7.2. Delivery of Option Shares. The Company shall deliver a certificate for the Option Shares to the Grantee as soon as practicable after payment therefor.

7.3. Payment of Purchase Price.

7.3.1. Cash Payment. The Grantee shall make cash payments by wire transfer, certified or bank check or personal check, in each case payable to the order of the Company; the Company shall not be required to deliver certificates for Option Shares until the Company has confirmed the receipt of good and available funds in payment of the purchase price thereof.

7.3.2. Cashless Payment. Provided that prior approval of the Company has been obtained, the Grantee may use Common Stock of the Company owned by him to pay the purchase price for the Option Shares by delivery of stock certificates in negotiable form which are effective to transfer good and valid title thereto to the Company, free of any liens or encumbrances. Shares of Common Stock used for this purpose shall be valued at the Fair Market Value.

7.3.3. Payment of Withholding Tax. Any required Withholding Tax may be paid in cash or with Common Stock in accordance with Sections 7.3.1 and 7.3.2.

7.3.4. Exchange Act Compliance. Notwithstanding the foregoing, the Company shall have the right to reject payment in the form of Common Stock if in the opinion of counsel for the Company, (i) it could result in an event of "recapture" under Section 16(b) of the Securities Exchange Act of 1934; (ii) such shares of Common Stock may not be sold or transferred to the Company; or (iii) such transfer could create legal difficulties for the Company.

8. Transfer. Except as may be set forth in the next sentence of this Section, the Option shall not be transferable by the Grantee other than by will or by the laws of descent and distribution, and the Option shall be exercisable, during the Grantee's lifetime, only by the Grantee (or, to the extent of legal incapacity or incompetency, the Grantee's guardian or legal representative). Notwithstanding the foregoing, the Grantee, with the approval of the Committee, may transfer all or a portion of the Option (i) (A) by gift, for no consideration, or (B) pursuant to a domestic relations order, in either case, to or for the benefit of the Grantee's "Immediate Family" (as defined below), or (ii) to an entity in which the Grantee and/or members of Grantee's Immediate Family own more than fifty percent of the voting interest, in exchange for an interest in that entity, subject to such limits as the Committee may establish, and the transferee shall remain subject to all the terms and conditions applicable to the Option prior to such transfer. The term "Immediate Family" shall mean any child, stepchild, grandchild, parent, stepparent, grandparent, spouse, former spouse, sibling, niece, nephew, mother-in-law, father-in-law, son-in-law, daughter-in-law, brother-in-law or sister-in-law, including adoptive relationships, any person sharing the Grantee's household (other than a tenant or employee), a trust in which these persons have more than fifty percent beneficial interest, and a foundation in which these persons (or the Grantee) control the management of the assets.

9. Company Representations. The Company hereby represents and warrants to the Grantee that:

9.1. the Company, by appropriate and all required action, is duly authorized to enter into this Agreement and consummate all of the transactions contemplated hereunder; and

9.2. the Option Shares, when issued and delivered by the Company to the Grantee in accordance with the terms and conditions hereof, will be duly and validly issued and fully paid and non-assessable.

10. Grantee Representations. The Grantee hereby represents and warrants to the Company that the Grantee:

10.1. is acquiring the Option and shall acquire the Option Shares for their own account and not with a view towards the distribution thereof;

10.2. has received a copy of the Plan as in effect as of the date of this Agreement;

10.3. has received a copy of all reports and documents required to be filed by the Company with the Securities and Exchange Commission pursuant to the Exchange Act, within the last 24 months and all reports issued by the Company to its stockholders;

10.4. understands that the Grantee is subject to the Company's Insider Trading Policy and has received a copy of such policy as of the date of this Agreement;

10.5. understands that the Grantee must bear the economic risk of the investment in the Option Shares, which cannot be sold by the Grantee unless they are registered under the Securities Act of 1933 ("1933 Act") or an exemption therefrom is available thereunder and that the Company is under no obligation to register the Option Shares for sale under the 1933 Act;

10.6. in their position with the Company, has had both the opportunity to ask questions and receive answers from the officers and directors of the Company and all persons acting on its behalf concerning the terms and conditions of the offer made hereunder and to obtain any additional information to the extent the Company possesses or may possess such information or can acquire it without unreasonable effort or expense necessary to verify the accuracy of the information obtained pursuant to Section 10.3 above;

10.7. is aware that the Company shall place stop transfer orders with its transfer agent against the transfer of the Option Shares in the absence of registration under the 1933 Act or an exemption therefrom as provided herein; and

10.8. if, at the time of issuance of the Option Shares, the issuance of such shares have not been registered under the 1933 Act, the certificates evidencing the Option Shares shall bear the following legends:

"The shares represented by this certificate have been acquired for investment and have not been registered under the Securities Act of 1933. The shares may not be sold or transferred in the absence of such registration or an exemption therefrom under said Act."

“The shares represented by this certificate have been acquired pursuant to a Stock Option Agreement dated as of the “Grant Date”, a copy of which is on file with the Company, and may not be transferred, pledged or disposed of except in accordance with the terms and conditions thereof.”

11. Restriction on Transfer of Option Shares. Anything in this Agreement to the contrary notwithstanding, the Grantee hereby agrees that they shall not sell, transfer by any means or otherwise dispose of the Option Shares acquired by him unless (i) the Option Shares are registered under the 1933 Act, or in the event that they are not so registered, an exemption from the 1933 Act registration requirements is available thereunder and the Grantee has furnished the Company with notice of such proposed transfer and the Company’s legal counsel, in its reasonable opinion, shall deem such proposed transfer to be so exempt, and (ii) such transfer is in compliance with the Company’s Insider Trading Policy, as in effect at such time.

12. Miscellaneous.

12.1. Notices. All notices, requests, deliveries, payments, demands and other communications which are required or permitted to be given under this Agreement shall be in writing and shall be either delivered personally or sent by registered or certified mail, or by private courier to the parties at their respective addresses set forth herein, or to such other address as either party shall have specified by notice in writing to the other. Notice shall be deemed duly given hereunder when delivered or mailed as provided herein.

12.2. Conflicts with the Plan. In the event of a conflict between the provisions of the Plan and the provisions of this Agreement, the provisions of the Plan shall in all respects be controlling.

12.3. Grantee and Stockholder Rights. The Grantee shall not have any of the rights of a stockholder with respect to the Option Shares until such shares have been issued after the due exercise of the Option. Nothing contained in this Agreement shall be deemed to confer upon Grantee any right to continue as an employee of the Company or any subsidiary or to employment or engagement with the Company or any subsidiary thereof in any capacity whatsoever.

12.4. Waiver. The waiver by any party hereto of a breach of any provision of this Agreement shall not operate or be construed as a waiver of any other or subsequent breach.

12.5. Entire Agreement. This Agreement constitutes the entire agreement between the parties with respect to the subject matter hereof. This Agreement may not be amended except by writing executed by the Grantee and the Company.

12.6. Binding Effect; Successors. This Agreement shall inure to the benefit of and be binding upon the parties hereto and, to the extent not prohibited herein, their respective heirs, successors, assigns and representatives. Nothing in this Agreement, expressed or implied, is intended to confer on any person other than the parties hereto and as provided above, their respective heirs, successors, assigns and representatives any rights, remedies, obligations or liabilities.

12.7. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware (without regard to choice of law provisions).

12.8. Headings. The headings contained herein are for the sole purpose of convenience of reference and shall not in any way limit or affect the meaning or interpretation of any of the terms or provisions of this Agreement.

12.9. IN WITNESS WHEREOF, the parties hereto have signed this Agreement as of the day and year first above:

PAVMED INC.

By: _____
Name: Lishan Aklog, M.D.
Title: Chairman and CEO
Date:

GRANTEE:

* * * * *

Exhibit 10.13

INDEMNIFICATION AGREEMENT

This Agreement, made and entered into effective as of [_____] ("Agreement"), by and between PAVmed Inc., a Delaware corporation ("Company"), and the undersigned indemnitee ("Indemnitee").

WHEREAS, the Board of Directors of the Company ("Board") has determined that the ability to attract and retain qualified officers and directors is in the best interests of the Company's stockholders; and

WHEREAS, it is reasonable, prudent and necessary for the Company to obligate itself contractually to indemnify such persons to the fullest extent permitted by applicable law so that such persons will serve or continue to serve the Company free from undue concern that they will not be adequately indemnified; and

WHEREAS, this Agreement is a supplement to and in furtherance of Article VII of the Bylaws of the Company, and Article Eighth of the Amended and Restated Certificate of Incorporation of the Company and any resolutions adopted pursuant thereto and shall neither be deemed to be a substitute therefor nor to diminish or abrogate any rights of Indemnitee thereunder; and

WHEREAS, Indemnitee is willing to serve on behalf of the Company on the condition that he be indemnified according to the terms of this Agreement;

NOW, THEREFORE, in consideration of the premises and the covenants contained herein, the Company and Indemnitee do hereby covenant and agree as follows:

1. Definitions. For purposes of this Agreement:

1.1 "Change in Control" means a change in control of the Company occurring after the date hereof of a nature that would be required to be reported in response to Item 6(e) of Schedule 14A of Regulation 14A (or in response to any similar item on any similar schedule or form) promulgated under the Securities Exchange Act of 1934, as amended ("Exchange Act"), whether or not the Company is then subject to such reporting requirement provided, however, that, without limitation, such a Change in Control shall be deemed to have occurred if after the date hereof (i) any "person" (as such term is used in Sections 13(d) and 14(d) of the Exchange Act), other than a person who is an officer or director of the Company on the date hereof (and any of such person's affiliates), is or becomes "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the then outstanding securities of the Company without the prior approval of at least two-thirds of the members of the Board in office immediately prior to such person attaining such percentage interest; (ii) the Company is a party to a merger, consolidation, sale of assets or other reorganization, or a proxy contest, as a consequence of which (A) members of the Board in office immediately prior to such transaction or event constitute less than a majority of the Board thereafter or (B) the voting securities of the Company outstanding immediately prior to such transaction do not continue to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than 50% of the combined voting power of the voting securities of the surviving entity outstanding immediately after such transaction with the power to elect at least a majority of the board of directors or other governing body of such surviving entity; or (iii) during any period of two consecutive years, individuals who at the beginning of such period constituted the Board (including for this purpose any new director whose election or nomination for election by the Company's stockholders was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such period or whose election or nomination for election was previously so approved) cease for any reason to constitute at least a majority of the Board.

1.2 “Corporate Status” means the status of a person who is or was a director, officer, employee, agent or fiduciary of the Company or of any other corporation, partnership, joint venture, trust, employee benefit plan or other enterprise which such person is or was serving at the request of the Company. In addition, service at the actual request of the Company, for purposes of this Agreement, Indemnitee shall be deemed to be serving or to have served at the request of the Company as a director, officer, employee, agent or fiduciary of any other enterprise (excluding any parent of the Company or any subsidiary of such parent other than the Company and is subsidiaries) if Indemnitee is or was serving as a director, officer, employee, agent or fiduciary of such enterprise and (A) such enterprise is or at the time of such service was an affiliate of the Company, (B) such enterprise is or at the time of such service was an employee benefit plan (or related trust) sponsored or maintained by the Company or an affiliate of the Company or (C) the Company or an affiliate of the Company directly or indirectly caused Indemnitee to be nominated, elected, appointed, designated, employed, engaged or selected to serve in such capacity.

1.3 “Disinterested Director” means a director of the Company who is not and was not a party to the Proceeding in respect of which indemnification is sought by Indemnitee.

1.4 “Expenses” means all reasonable attorneys’ fees, retainers, court costs (including trial and appeals), transcript costs, fees of experts, witness fees, travel expenses, duplicating costs, printing and binding costs, telephone charges, postage, delivery service fees, federal, state, local, or foreign taxes imposed as a result of the actual or deemed receipt of any payments under this Agreement, and all other disbursements or expenses of the types customarily incurred in connection with prosecuting, defending, preparing to prosecute or defend, appealing, preparing to appeal (including without limitation the premium, security for, and other costs relating to any costs bond, supersedes bond, or other appeal bond or its equivalent), investigating, or being or preparing to be a witness in a Proceeding.

1.5 “Independent Counsel” means a law firm, or a member of a law firm, that is experienced in matters of corporation law and neither presently is, nor in the past five years has been, retained to represent: (i) the Company or Indemnitee in any other matter material to either such party, or (ii) any other party to the Proceeding giving rise to a claim for indemnification hereunder. Notwithstanding the foregoing, the term “Independent Counsel” does not include any person who, under the applicable standards of professional conduct then prevailing, would have a conflict of interest in representing either the Company or Indemnitee in an action to determine Indemnitee’s rights under this Agreement. Except as provided in the first sentence of Section 9.3 hereof, Independent Counsel shall be selected by (a) the Disinterested Directors or (b) a committee of the Board consisting of two or more Disinterested Directors or if (a) and (b) above are not possible, then by a majority of the full Board.

1.6 “Proceeding” means any action, suit, arbitration, alternate dispute resolution mechanism, investigation, administrative hearing or any other proceeding, whether conducted by or on behalf of the Company or any other party, whether civil, criminal, administrative or investigative, and whether formal or informal, except one initiated by an Indemnitee pursuant to Section 11 of this Agreement to enforce his rights under this Agreement.

2. Services by Indemnitee.

Indemnitee agrees to serve as a director, officer or employee of the Company. Indemnitee may at any time and for any reason resign from such position (subject to any other contractual obligation or any obligation imposed by operation of law).

3. Indemnification - General.

Except with respect to actions finally adjudicated, by a court of competent jurisdiction and subject to no further appeal, to be a result of actual fraud or intentional misconduct of the Indemnitee, the Company shall indemnify, and, subject to Section 26 hereof, advance Expenses to, Indemnitee as provided in this Agreement to the fullest extent permitted by applicable law in effect on the date hereof and to such greater extent as any amendment to or interpretation of applicable law may thereafter from time to time permit. The rights of Indemnitee provided under the preceding sentence shall include, but shall not be limited to, the rights set forth in the other Sections of this Agreement.

4. Proceedings Other Than Proceedings by or in the Right of the Company.

Indemnitee shall be entitled to the rights of indemnification provided in this Agreement if, by reason of his Corporate Status, he is, was or is threatened to be made, a party to any threatened, pending or completed Proceeding, other than a Proceeding by or in the right of the Company. Pursuant to this Agreement, subject to Section 26 hereof, Indemnitee shall be indemnified against Expenses, judgments, penalties, fines and amounts paid in settlement actually and reasonably incurred by him or on his behalf in connection with any such Proceeding or any claim, issue or matter therein, if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, and, with respect to any criminal Proceeding, had no reasonable cause to believe his conduct was unlawful.

5. Proceedings by or in the Right of the Company.

Indemnitee shall be entitled to the rights of indemnification provided in this Agreement if, by reason of his Corporate Status, he was or is threatened to be made, a party to any threatened, pending or completed Proceeding brought by or in the right of the Company to procure a judgment in its favor. Pursuant to this Agreement, subject to Section 26 hereof, Indemnitee shall be indemnified against amounts paid in settlement and Expenses actually and reasonably incurred by him or on his behalf in connection with the defense or settlement of any such Proceeding if he acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company. Notwithstanding the foregoing, no indemnification under this paragraph shall be made in respect of (1) a threatened or pending Proceeding which is settled or otherwise disposed of, or (2) any claim, issue or matter as to which such person shall have been adjudged to be liable to the Company, by a court of competent jurisdiction and subject to no further appeal, unless and only to the extent that the court in which such Proceeding shall have been brought, was brought or is pending, shall determine, upon application, that Indemnitee is fairly and reasonably entitled to indemnity for such portion of the settlement amount and Expenses as the court deems proper.

6. Indemnification for Expenses of Party Who is Wholly or Partly Successful.

Notwithstanding any other provision of this Agreement except for Section 26 hereof, to the extent that Indemnitee is, by reason of his Corporate Status, a party to and is successful, on the merits, procedurally or otherwise, in any Proceeding, he shall be indemnified against all Expenses (and, when eligible hereunder, amounts paid in settlement) actually and reasonably incurred by him or on his behalf in connection therewith. If Indemnitee is not wholly successful in such Proceeding but is successful, on the merits, procedurally or otherwise, as to one or more but less than all claims, issues or matters in such Proceeding, the Company shall indemnify Indemnitee against all Expenses (and, when eligible hereunder, amount paid in settlement) actually and reasonably incurred by him or on his behalf in connection with each successfully resolved claim, issue or matter. For purposes of this Agreement, the term "successful, on the merits or otherwise," includes, but is not limited to, (i) any termination, withdrawal, or dismissal (with or without prejudice) of any Proceeding against the Indemnitee without any express finding of liability or guilt against him, including a settlement (with or without court approval), a motion for summary judgment, or a plea of *nolo contendere* or its equivalent, and (ii) the expiration of 90 days after the making of any claim or threat of a Proceeding without the institution of the same and without any promise or payment made to induce a settlement.

7. Indemnification for Expenses as a Witness.

Notwithstanding any other provision of this Agreement except for Section 26 hereof, to the extent that Indemnitee is, by reason of his Corporate Status, a witness in any Proceeding, he shall be indemnified against all Expenses actually and reasonably incurred by him or on his behalf in connection therewith.

8. Advancement of Expenses and Other Amounts.

Subject to Section 26 hereof, the Company shall advance all Expenses, judgments, penalties, fines and, when eligible hereunder, amounts paid in settlement, incurred by or on behalf of Indemnitee in connection with any Proceeding within thirty (30) days after the receipt by the Company of a statement or statements from Indemnitee requesting such advance or advances from time to time, whether prior to or after final disposition of such Proceeding. Such statement or statements shall reasonably evidence the Expenses, judgments, penalties, fines and amounts paid in settlement, incurred by Indemnitee In connection with any request for advancement of Expenses, judgments, penalties, fines and amounts paid in settlement, Indemnitee shall not be required to provide any documentation or information to the extent that the provision thereof would undermine or otherwise jeopardize attorney-client privilege. The Indemnitee shall qualify for advances upon the execution and delivery to the Company of this Agreement, which shall constitute an undertaking providing that the Indemnitee undertakes to the fullest extent permitted by law to repay the advance (without interest) if and to the extent that it is ultimately determined by a court of competent jurisdiction in a final judgment, not subject to further appeal, that Indemnitee is not entitled to be indemnified by the Company. No other form of undertaking shall be required other than the execution of this Agreement. The Company's obligation in respect of the advancement of Expenses, judgments, penalties, fines and amounts paid in settlement in connection with a criminal Proceeding in which Indemnitee is a defendant shall terminate at such time as Indemnitee pleads guilty or is convicted after trial and such conviction becomes final and no longer subject to appeal. Advances shall be unsecured and interest free. Advances shall be made without regard to Indemnitee's ability to repay such amounts and without regard to Indemnitee's ultimate entitlement to indemnification under the other provisions of this Agreement. Without limiting the generality or effect of the foregoing, within thirty days after any request by Indemnitee, the Company shall, in accordance with such request (but without duplication), (a) pay such Expenses on behalf of Indemnitee, (b) advance to Indemnitee funds in an amount sufficient to pay such Expenses, or (c) reimburse Indemnitee for such Expenses. The Company shall not seek from a court, or agree to, a "bar order" which would have the effect of prohibiting or limiting the Indemnitee's rights to receive advancement of expenses under this Agreement.

9. Procedure for Determination of Entitlement to Indemnification.

9.1 To obtain indemnification under this Agreement in connection with any Proceeding, and for the duration thereof, Indemnitee shall submit to the Company a written request, including therein or therewith such documentation and information as is reasonably available to Indemnitee and is reasonably necessary to determine whether and to what extent Indemnitee is entitled to indemnification. The Secretary of the Company shall, promptly upon receipt of any such request for indemnification, advise the Board in writing that Indemnitee has requested indemnification.

9.2 Upon written request by Indemnitee for indemnification pursuant to Section 9.1 hereof, a determination, if required by applicable law, with respect to Indemnitee's entitlement thereto shall be made in such case: (i) if a Change in Control shall have occurred, by Independent Counsel (unless Indemnitee shall request that such determination be made by the Board or the stockholders, in which case in the manner provided for in clauses (ii) or (iii) of this Section 9.2) in a written opinion to the Board, a copy of which shall be delivered to Indemnitee; (ii) if a Change of Control shall not have occurred, at the election of the Company, (A) by the Board by a majority vote of a quorum consisting of Disinterested Directors, or (B) if a quorum of the Board consisting of Disinterested Directors is not obtainable, by a majority of a committee of the Board consisting of two or more Disinterested Directors, or (C) by Independent Counsel in a written opinion to the Board, a copy of which shall be delivered to Indemnitee, or (D) by the stockholders of the Company, by a majority vote of a quorum consisting of stockholders who are not parties to the proceeding, or if no such quorum is obtainable, by a majority vote of stockholders who are not parties to such proceeding; or (iii) as provided in Section 10.2 of this Agreement. If it is so determined that Indemnitee is entitled to indemnification, payment to Indemnitee shall be made within ten (10) days after such determination. Indemnitee shall cooperate with the person, persons or entity making such determination with respect to Indemnitee's entitlement to indemnification, including providing to such person, persons or entity upon reasonable advance request any documentation or information which is not privileged or otherwise protected from disclosure and which is reasonably available to Indemnitee and reasonably necessary to such determination. Any costs or expenses (including attorneys' fees and disbursements) incurred by Indemnitee in so cooperating with the person, persons or entity making such determination shall be borne by the Company (irrespective of the determination as to Indemnitee's entitlement to indemnification) and the Company hereby indemnifies and agrees to hold Indemnitee harmless therefrom.

9.3 If a Change of Control shall have occurred, Independent Counsel shall be selected by Indemnitee (unless Indemnitee shall request that such selection be made by the Board), and Indemnitee (or the Board, as the case may be) shall give written notice to the other party advising it of the identity of Independent Counsel so selected. In either event, Indemnitee or the Company, as the case may be, may, within seven days after such written notice of selection shall have been given, deliver to the Company or to Indemnitee, as the case may be, a written objection to such selection. Such objection may be asserted only on the ground that Independent Counsel so selected does not meet the requirements of "Independent Counsel" as defined in Section 1 of this Agreement, and the objection shall set forth with particularity the factual basis of such assertion. If such written objection is made, Independent Counsel so selected may not serve as Independent Counsel unless and until a court has determined that such objection is without merit. If, within 20 days after submission by Indemnitee of a written request for indemnification pursuant to Section 9.1 hereof, no Independent Counsel shall have been selected and not objected to, either the Company or Indemnitee may petition a court of competent jurisdiction, for resolution of any objection which shall have been made by the Company or Indemnitee to the other's selection of Independent Counsel and/or for the appointment as Independent Counsel of a person selected by such court or by such other person as such court shall designate, and the person with respect to whom an objection is so resolved or the person so appointed shall act as Independent Counsel under Section 9.2 hereof. The Company shall pay any and all reasonable fees and expenses of Independent Counsel incurred by such Independent Counsel in connection with its actions pursuant to this Agreement, and the Company shall pay all reasonable fees and expenses incident to the procedures of this Section 9.3, regardless of the manner in which such Independent Counsel was selected or appointed. Upon the due commencement date of any judicial proceeding pursuant to Section 11.1(iii) of this Agreement, Independent Counsel shall be discharged and relieved of any further responsibility in such capacity (subject to the applicable standards of professional conduct then prevailing).

10. Presumptions and Effects of Certain Proceedings.

10.1 In making a determination with respect to entitlement to indemnification hereunder, the person or persons or entity making such determination shall presume that Indemnitee is entitled to indemnification under this Agreement if Indemnitee has submitted a request for indemnification in accordance with Section 9.1 of this Agreement, and the Company shall have the burden of proof to overcome that presumption by clear and convincing evidence in connection with the making by any person, persons or entity of any determination contrary to that presumption.

10.2 If the person, persons or entity empowered or selected under Section 9 of this Agreement to determine whether Indemnitee is entitled to indemnification shall not have made a determination within sixty (60) days after receipt by the Company of the request therefor, the requisite determination of entitlement to indemnification shall be deemed to have been made and Indemnitee shall be entitled to such indemnification, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) prohibition of such indemnification under applicable law, as determined by a court of competent jurisdiction in a final judgment, not subject to further appeal; provided, however, that such 60-day period may be extended for a reasonable time, not to exceed an additional thirty (30) days, if the person, persons or entity making the determination with respect to entitlement to indemnification in good faith require(s) such additional time for the obtaining or evaluating of documentation and/or information relating thereto; and provided, further, however, that the foregoing provisions of this Section 10.2 shall not apply (i) if the determination of entitlement to indemnification is to be made by the stockholders pursuant to Section 9.2 of this Agreement and if (A) within 15 days after receipt by the Company of the request for such determination the Board has resolved to submit such determination to the stockholders for their consideration at an annual meeting thereof to be held within 75 days after such receipt and such determination is made thereat, or (B) a special meeting of stockholders is called within 15 days after such receipt for the purpose of making such determination, such meeting is held for such purpose within 60 days after having been so called and such determination is made thereat, or (ii) if the determination of entitlement to indemnification is to be made by Independent Counsel pursuant to Section 9.2 of this Agreement. In connection with each meeting at which a stockholder determination will be made, the Company shall solicit proxies that expressly include a proposal to indemnify or reimburse the Indemnitee. The Company shall afford the Indemnitee ample opportunity to present evidence of the facts upon which the Indemnitee relies for indemnification in any Company proxy statement relating to such stockholder determination. Subject to the fiduciary duties of its members under applicable law, the Board will not recommend against indemnification or reimbursement in any proxy statement relating to the proposal to indemnify or reimburse the Indemnitee.

10.3 The termination of any Proceeding or of any claim, issue or matter therein, by judgment, order, settlement or conviction, or upon a plea of nolo contendere or its equivalent, shall not (except as otherwise expressly provided in this Agreement) of itself adversely affect the right of Indemnitee to indemnification or create a presumption that Indemnitee did not act in good faith and in a manner which he reasonably believed to be in or not opposed to the best interests of the Company or, with respect to any criminal Proceeding, that Indemnitee had reasonable cause to believe that his conduct was unlawful.

10.4 Reliance as Safe Harbor.

For purposes of this Agreement, the Indemnitee shall be deemed to have acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, or, with respect to any criminal Proceeding, to have had no reasonable cause to believe his conduct was unlawful, if his action is based on (i) the records or books of account of the Company, or another enterprise, including financial statements, (ii) information supplied to him by the officers of the Company or another enterprise in the course of their duties, (iii) the advice of legal counsel for the Company or another enterprise, or of an independent certified public accountant or an appraiser or other expert selected with reasonable care by the Company or another enterprise. The term "another enterprise" as used in this Section shall mean any other corporation or any partnership, joint venture, trust, employee benefit plan or other enterprise of which the Indemnitee is or was serving at the request of the Company as a director, officer, partner, trustee, employee or agent. The provisions of this Section shall not be deemed to be exclusive or to limit in any way the other circumstances in which the Indemnitee may be deemed to have met the applicable standard of conduct set forth herein. Whether or not the foregoing provisions of this Section 10.4 are satisfied, it shall in any event be presumed that Indemnitee has at all times acted in good faith and in a manner he reasonably believed to be in or not opposed to the best interests of the Company, or, with respect to any criminal Proceeding, to have had no reasonable cause to believe Indemnitee's conduct was unlawful. Anyone seeking to overcome this presumption shall have the burden of proof and the burden of persuasion by clear and convincing evidence.

11. Remedies of Indemnitee.

11.1 In the event that (i) a determination is made pursuant to Section 9 of this Agreement that Indemnitee is not entitled to indemnification under this Agreement, (ii) advancement of Expenses is not timely made pursuant to Section 8 of this Agreement, (iii) the determination of indemnification is to be made by Independent Counsel pursuant to Section 9.2 of this Agreement and such determination shall not have been made and delivered in a written opinion within sixty (60) days after receipt by the Company of the request for indemnification, (iv) payment of indemnification is not made pursuant to Section 7 of this Agreement within thirty (30) days after receipt by the Company of a written request therefor, or (v) payment of indemnification is not made within thirty (30) days after a determination has been made that Indemnitee is entitled to indemnification or such determination is deemed to have been made pursuant to Section 9 or 10 of this Agreement, Indemnitee shall be entitled to an adjudication in an appropriate court of the State of Delaware, or in any other court of competent jurisdiction, of his entitlement to such indemnification or advancement of Expenses, judgments, penalties, fines or, when eligible hereunder, amounts paid in settlement. The Company shall not oppose Indemnitee's right to seek any such adjudication.

11.2 In the event that a determination shall have been made pursuant to Section 9 of this Agreement that Indemnitee is not entitled to indemnification, any judicial proceeding commenced pursuant to this Section shall be conducted in all respects as a de novo trial on the merits and Indemnitee shall not be prejudiced by reason of that adverse determination.

11.3 If a determination shall have been made or deemed to have been made pursuant to Section 9 or 10 of this Agreement that Indemnitee is entitled to indemnification, the Company shall be bound by such determination in any judicial proceeding commenced pursuant to this Section, absent (i) a misstatement by Indemnitee of a material fact, or an omission of a material fact necessary to make Indemnitee's statement not materially misleading, in connection with the request for indemnification, or (ii) prohibition of such indemnification under applicable law.

11.4 The Company shall be precluded from asserting in any judicial proceeding commenced pursuant to this Section that the procedures and presumptions of this Agreement are not valid, binding and enforceable and shall stipulate in any such court that the Company is bound by all the provisions of this Agreement.

11.5 In the event that Indemnitee, pursuant to this Section, seeks a judicial adjudication of his rights under, or to recover damages for breach of, this Agreement or any other agreement, including any other indemnification, contribution or advancement agreement, or any provision of the certificate of incorporation or by-laws of the Company now or hereafter in effect, or for recovery under directors' and officers' liability insurance policies maintained by the Company, Indemnitee shall be entitled to recover from the Company, and shall be indemnified by the Company against, any and all expenses (of the kinds described in the definition of Expenses) actually and reasonably incurred by him in such judicial adjudication, but only if he prevails therein. If it shall be determined in such judicial adjudication that Indemnitee is entitled to receive less than all of the indemnification or advancement of expenses sought, the expenses incurred by Indemnitee in connection with such judicial adjudication shall be appropriately prorated. In addition, the Company shall, if so requested by Indemnitee, advance the foregoing expenses to Indemnitee, subject to and in accordance with Section 8.

12. Procedure Regarding Indemnification.

With respect to any Proceedings, the Indemnitee, prior to taking any action with respect to such Proceeding, shall consult with the Company as to the procedure to be followed in defending, settling, or compromising the Proceeding and may not consent to any settlement or compromise of the Proceeding without the written consent of the Company (which consent may not be unreasonably withheld or delayed). The Company shall be entitled to participate in defending, settling or compromising any Proceeding and to assume the defense of such Proceeding with counsel of its choice and shall assume such defense if requested by the Indemnitee. Notwithstanding the election by, or obligation of, the Company to assume the defense of a Proceeding, the Indemnitee shall have the right to participate in the defense of such Proceeding and to employ counsel of Indemnitee's choice, but the fees and expenses of such counsel shall be at the expense of the Indemnitee unless (i) the employment of such counsel has been authorized in writing by the Company, (ii) Indemnitee shall have reasonably determined that there is a conflict of interest between the Company and Indemnitee in the conduct of the defense of the Proceeding, (iii) the Indemnitee has reasonably concluded that there may be defenses available to him which are different from or additional to those available to the Company (in which latter case the Company shall not have the right to direct the defense of such Proceeding on behalf of the Indemnitee), (iv) after a Change in Control, the employment of counsel by Indemnitee has been approved by the Independent Counsel, (v) the Company shall not in fact have employed counsel to assume the defense of such Proceeding, or (vi) the fees and expenses are non-duplicative and reasonably incurred in connection with Indemnitee's role in the Proceedings, despite the Company's assumption of the defense, in each of which cases all Expenses of the Proceeding shall be borne by the Company. The Company shall not be entitled to assume the defense of any Proceeding brought by or on behalf of the Company, or as to which Indemnitee shall have made the determination provided for in (ii) above or under the circumstances provided for in (iii) and (iv) above. Indemnitee agrees that any such separate counsel retained by Indemnitee will be not more than one additional firm of attorneys, and such firm shall be a member of any approved list of panel counsel under the Company's applicable directors' and officers' liability insurance policy, should the applicable policy provide for a panel of approved counsel and should such approved panel list comprise law firms with well-established reputations in the type of litigation at issue. (For clarity, the fact of a firm's being part of a panel shall not be evidence of a firm's having a well-established national reputation for the type of litigation at issue.) If the Company assumes the defense of a Proceeding, then counsel for the Company and Indemnitee shall keep Indemnitee reasonably informed of the status of the Proceeding and promptly send to Indemnitee copies of all documents filed or produced in the Proceeding, and the Company shall not compromise or settle any such Proceeding without the written consent of the Indemnitee (which consent may not be unreasonably withheld or delayed) if the relief provided shall be other than monetary damages and shall promptly notify the Indemnitee of any settlement and the amount thereof.

13. Non-Exclusivity; Survival of Rights; Insurance; Subrogation; Contribution.

13.1 The rights of indemnification and to receive advancement of Expenses as provided by this Agreement shall not be deemed exclusive of any other rights to which Indemnitee may at any time be entitled under applicable law, the certificate of incorporation or by-laws of the Company, any agreement, a vote of stockholders or a resolution of directors, or otherwise. No amendment, alteration or repeal of this Agreement or any provision hereof shall be effective as to any Indemnitee with respect to any action taken or omitted by such Indemnitee in his Corporate Status prior to such amendment, alteration or repeal.

13.2 For the duration of Indemnitee's service as a director and/or officer of the Company, and thereafter for so long as Indemnitee shall be subject to any Proceeding, the Company shall use commercially reasonable efforts (taking into account the scope and amount of coverage available relative to the cost thereof) to cause to be maintained in effect policies of directors' and officers' liability insurance providing coverage for directors and/or officers of the Company that comparable to what similarly situated company's would maintain. In all policies of directors' and officers' liability insurance obtained by the Company, Indemnitee shall be an insured in such a manner as to provide Indemnitee the same rights and benefits, subject to the same limitations, as are accorded to the Company's directors and officers most favorably insured by such policy. Company shall promptly notify Indemnitee of any good faith determination not to provide such coverage or of any lapse or termination in any such policy. In the event of a Change in Control or the Company's becoming insolvent, the Company shall maintain in force any and all directors' and officers' liability insurance in respect of the individual directors and officers of the Company, for a fixed period of six years thereafter (a "Tail Policy"). Such coverage shall be non-cancellable and shall be placed and serviced for the duration of its term by the Company's incumbent insurance broker. Such broker shall place the Tail policy with the incumbent insurance carriers using the policies that were in place at the time of the change of control event (unless the incumbent carriers will not offer such policies, in which case the Tail Policy placed by the Company's insurance broker shall be substantially comparable in scope and amount as the expiring policies, and the insurance carriers for the Tail Policy shall have an AM Best rating that is the same or better than the AM Best ratings of the expiring policies.

13.3 In the event of any payment under this Agreement, subject to Section 13.4, the Company shall be subrogated to the extent of such payment to all of the rights of recovery of Indemnitee, who shall execute all papers required and take all action necessary to secure such rights, including execution of such documents as are reasonably necessary to enable the Company to bring suit to enforce such rights.

13.4 The Company hereby acknowledges that Indemnitee may have rights to indemnification for Losses provided by any parent of the Company ("Other Indemnitor"). The Company agrees with Indemnitee that the Company is the indemnitor of first resort of Indemnitee with respect to matters for which indemnification is provided under this Agreement and that the Company will be obligated to make all payments due to or for the benefit of Indemnitee under this Agreement without regard to any rights that Indemnitee may have against the Other Indemnitor. The Company hereby waives any equitable rights to contribution or indemnification from the Other Indemnitor in respect of any amounts paid to Indemnitee hereunder. The Company further agrees that no payment by the Other Indemnitor to or for the benefit of Indemnitee with respect to matters for which indemnification or advancement of expenses is provided under this Agreement shall affect the obligations of the Company hereunder, and that the Company shall be obligated to repay the Other Indemnitor for all amounts so paid or reimbursed to the extent that the Company has an obligation to indemnify or advance expenses to Indemnitee hereunder. Subject to the foregoing, the Company shall not be liable under this Agreement to make any payment of amounts otherwise indemnifiable hereunder if and to the extent that Indemnitee has otherwise actually received such payment under any insurance policy, contract, agreement or otherwise; provided, however, that payment made to Indemnitee pursuant to an insurance policy purchased and maintained by Indemnitee at his or her own expense of any amounts otherwise indemnifiable or obligated to be made pursuant to this Agreement shall not reduce the Company's obligations to Indemnitee pursuant to this Agreement.

13.5 If a determination is made that Indemnitee is not entitled to indemnification, after Indemnitee submits a written request therefor, under this Agreement, then in respect of any threatened, pending or completed Proceeding in which the Company is jointly liability with the Indemnitee (or would be if joined in such Proceeding), the Company shall contribute to the amount of Expenses, judgments, fines and amounts paid in settlement by the Indemnitee in such proportion as is appropriate to reflect (i) the relative benefits received by the Company on the one hand and the Indemnitee on the other hand from the transaction from which Proceeding arose, and (ii) the relative fault of the Company on the one hand and of the Indemnitee on the other hand in connection with the events that resulted in such Expenses, judgments, fines or amounts paid in settlement, as well as any other relevant equitable considerations. The relative fault of the Company on the one hand and of the Indemnitee on the other hand shall be determined by reference to, among other things, the parties' relative intent, knowledge, access to information and opportunity to correct or prevent the circumstances resulting in such Expenses, judgments, fines or amounts paid in settlement. The Company agrees that it would not be just and equitable if contribution pursuant to this Section were determined by pro rata allocation or any other method of allocation that does not take into account the foregoing equitable considerations. The determination as to the amount of the contribution, if any, shall be made by: (i) a court of competent jurisdiction upon the application of both the Indemnitee and the Company (if the Proceeding had been brought in, and final determination had been rendered by such court); (ii) the Board by a majority vote of a quorum consisting of Disinterested Directors; or (iii) Independent Counsel, if a quorum is not obtainable for purpose of (ii) above, or, even if obtainable, a quorum of Disinterested Directors so directs.

14. Duration of Agreement.

This Agreement shall continue so long as Indemnitee may be subject to any possible Proceeding in respect of which Indemnitee is granted rights of indemnification or advancement of Expenses hereunder, and until one (1) year after the final termination of any such Proceeding then pending (including any rights of appeal thereto) and of any proceeding commenced by Indemnitee pursuant to Section 11 of this Agreement relating thereto (including any rights of appeal thereto). This Agreement shall be binding upon the Company and its successors and assigns and shall inure to the benefit of Indemnitee and his spouse, heirs, executors, personal representatives and administrators. The Company shall require and cause any successor (whether direct or indirect by purchase, merger, consolidation, or otherwise) to all, substantially all, or a substantial part, of the business and/or assets of the Company, by written agreement in form and substance satisfactory to Indemnitee, expressly to assume and agree to perform this Agreement in the same manner and to the same extent that the Company would be required to perform to the fullest extent permitted by law.

15. Severability.

If any provision or provisions of this Agreement shall be held to be invalid, illegal or unenforceable for any reason whatsoever: (a) the validity, legality and enforceability of the remaining provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall not in any way be affected or impaired thereby; and (b) to the fullest extent possible, the provisions of this Agreement (including, without limitation, each portion of any Section of this Agreement containing any such provision held to be invalid, illegal or unenforceable, that is not itself invalid, illegal or unenforceable) shall be construed so as to give effect to the intent manifested by the provision held invalid, illegal or unenforceable.

16. Entire Agreement.

This Agreement constitutes the entire agreement between the Company and the Indemnitee with respect to the subject matter hereof and supersedes all prior agreements, understanding, negotiations and discussion, both written and oral, between the parties hereto with respect to such subject matter (the "Prior Agreements"); provided, however, that if this Agreement shall ever be held void or unenforceable for any reasons whatsoever, and is not reformed pursuant to Section 15 hereof, then (i) this Agreement shall not be deemed to have superseded any Prior Agreements; (ii) all of such Prior Agreements shall be deemed to be in full force and effect notwithstanding the execution of this Agreement; and (iii) the Indemnitee shall be entitled to maximum indemnification benefits provided under any Prior Agreements, as well as those provided under applicable law, the certificate of incorporation or by-laws of the Company, a vote of stockholders or resolution of directors.

17. Exception to Right of Indemnification or Advancement of Expenses.

17.1 Except as provided in Section 11.5, Indemnitee shall not be entitled to indemnification or advancement of Expenses, judgments, penalties, fines and amounts paid in settlement under this Agreement with respect to any Proceeding, or any claim therein, brought or made by him against the Company.

17.2 Indemnitee shall not be entitled to indemnification under this Agreement with respect to any Proceeding, or any claim therein, arising from the purchase and sale by Indemnitee of securities in violation of Section 16(b) of the Exchange Act or Company similar successor statute.

18. Covenant Not to Sue; Limitation of Actions; Release of Claims.

No legal action shall be brought and no cause of action shall be asserted by or on behalf of the Company (or any of its subsidiaries) against the Indemnitee, his spouse, heirs, executors, personal representatives or administrators after the expiration of two (2) years from the date of accrual of such cause of action and any claim or cause of action of the Company (or any of its subsidiaries) shall be extinguished and deemed released unless asserted by the filing of a legal action within such two (2) year period; provided, however, that if any shorter period of limitation is otherwise applicable to any such cause of action, such shorter period shall govern.

19. Identical Counterparts.

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

20. Headings.

The headings of the paragraphs of this Agreement are inserted for convenience only and shall not be deemed to constitute part of this Agreement or to affect the construction thereof.

21. Modification and Waiver.

No supplement, modification or amendment of this Agreement shall be binding unless executed in writing by both of the parties hereto. No waiver of any of the provisions of this Agreement shall be deemed or shall constitute a waiver of any other provisions hereof (whether or not similar) nor shall such waiver constitute a continuing waiver.

22. Notice by Indemnitee.

Indemnitee agrees promptly to notify the Company in writing upon being served with any summons, citation, subpoena, complaint, indictment, information or other document relating any Proceeding or matter which may be subject to indemnification or advancement of Expenses, judgments, penalties, fines or amounts paid in settlement covered hereunder. The failure to notify the Company on a timely basis shall not constitute a waiver of Indemnitee's rights under this Agreement, except to the extent that such failure or delay (i) causes the amounts paid or to be paid by the Company to be greater than they otherwise would have been, (ii) adversely affects the Company's ability to obtain for itself or Indemnitee coverage or proceeds under any insurance policy available to the Company or Indemnitee, or (iii) otherwise results in prejudice to the Company.

23. Notices.

All notices, requests, demands and other communications hereunder shall be in writing and shall be deemed to have been duly given if (i) delivered by hand and receipted for by the party to whom such notice or other communication shall have been directed, or (ii) mailed by certified or registered mail with postage prepaid, on the third business day after the date on which it is so mailed:

If to Indemnitee, to the address set forth in the signature page hereto

If to the Company, to:

PAVmed Inc.
360 Madison Avenue, 25th Floor
New York, New York 10017
Attention: Chief Executive Officer

or to such other address or such other person as Indemnitee or the Company shall designate in writing in accordance with this Section, except that notices regarding changes in notices shall be effective only upon receipt.

24. Governing Law.

This Agreement and the legal relations among the parties shall be governed by, and construed and enforced in accordance with, the laws of the State of Delaware, without regard to its conflict of laws rules. The Company and Indemnitee hereby irrevocably and unconditionally (i) agree that any action or proceeding arising out of or in connection with this Agreement shall be brought only in the Chancery Court of the State of Delaware (the "Delaware Court"), and not in any other state or federal court in the United States of America or any court in any other country, (ii) consent to submit to the exclusive jurisdiction of the Delaware Court for purposes of any action or proceeding arising out of or in connection with this Agreement, (iii) waive any objection to the laying of venue of any such action or proceeding in the Delaware Court, and (iv) waive, and agree not to plead or to make, any claim that any such action or proceeding brought in the Delaware Court has been brought in an improper or inconvenient forum.

25. Monetary Damages Insufficient; Specific Performance.

The Company and Indemnitee agree that a monetary remedy for breach of this Agreement may be inadequate, impracticable and difficult of proof, and further agree that such breach may cause Indemnitee irreparable harm. Accordingly, the parties hereto agree that Indemnitee may enforce this Agreement by seeking injunctive relief and/or specific performance hereof, without any necessity of showing actual damage or irreparable harm (having agreed that actual and irreparable harm will result in not forcing the Company to specifically perform its obligations pursuant to this Agreement) and that by seeking injunctive relief and/or specific performance, Indemnitee shall not be precluded from seeking or obtaining any other relief to which he may be entitled. The Company and Indemnitee further agree that Indemnitee shall be entitled to such specific performance and injunctive relief, including temporary restraining orders, preliminary injunctions and permanent injunctions, without the necessity of posting bonds or other undertaking in connection therewith. The Company acknowledges that in the absence of a waiver, a bond or undertaking may be required of Indemnitee by the Court, and the Company hereby waives any such requirement of a bond or undertaking. If Indemnitee seeks mandatory injunctive relief, it shall not be a defense to enforcement of the Company's obligations set forth in this Agreement that Indemnitee has an adequate remedy at law for damages.

26. Notice by Company.

If the Indemnitee is the subject of, or is, to the knowledge of the Company, implicated in any way during an investigation, whether formal or informal, that is related to Indemnitee's Corporate Status and that reasonably could lead to a Proceeding for which indemnification can be provided under this Agreement, the Company shall notify the Indemnitee of such investigation and shall share (to the extent legally permissible) with Indemnitee any information it has provided to any third parties concerning the investigation ("Shared Information"). By executing this Agreement, Indemnitee agrees that such Shared Information is material non-public information that Indemnitee is obligated to hold in confidence and may not disclose publicly; provided, however, that Indemnitee may use the Shared Information and disclose such Shared Information to Indemnitee's legal counsel and third parties, in each case solely in connection with defending Indemnitee from legal liability.

27. Miscellaneous.

Use of the masculine pronoun shall be deemed to include usage of the feminine pronoun where appropriate.

[*Signature Page Follows*]

IN WITNESS WHEREOF, the parties hereto have executed this Agreement on the day and year first above written.

PAVMED INC.

By: _____
Name:
Title:

INDEMNITEE

_____

Name:
Address: _____

_____

[*Signature Page to Indemnification Agreement*]

Exhibit 10.14.2

TERMINATION AGREEMENT

This Termination Agreement (this "***Termination Agreement***") is entered as of February 10, 2023 (the "***Effective Date***"), by and among ResearchDx, Inc., a California corporation ("***ResearchDx***"), Lucid Diagnostics Inc., a Delaware corporation ("***Lucid Diagnostics***"), and LucidDx Labs Inc., a Delaware corporation ("***LucidDx Labs***"). Each of ResearchDx, Lucid Diagnostics and LucidDx Labs is referred to herein as a "***Party***" and, collectively, as the "**Parties**".

WHEREAS, ResearchDx, Lucid Diagnostics and LucidDx Labs are parties to that certain Asset Purchase Agreement, dated as of February 25, 2022 (as amended from time to time, the "***Asset Purchase Agreement***"), pursuant to which LucidDx Labs purchased from ResearchDx certain assets in respect of that certain CLIA-certified, high-complexity clinical laboratory located at 14 Orchard Road, Lake Forest, CA 92630 (the "***Laboratory***"), where the EsoGuard assay was then conducted for the benefit of LucidDx Labs' parent company, Lucid Diagnostics.

WHEREAS, in connection with the consummation of the transactions contemplated by the Purchase Agreement, ResearchDx and LucidDx Labs entered into that certain License Agreement, dated as of February 25, 2022 (as amended from time to time prior to the date hereof, the "***Management Services Agreement***"; capitalized terms used but not defined herein have the meanings assigned thereto in the Management Services Agreement), pursuant to which LucidDx Labs engaged ReseachDx to provided certain services related to the operation of the Laboratory following consummation of the transactions contemplated by the Asset Purchase Agreement;

WHEREAS, the Parties have mutually agreed to the termination of the Management Services Agreement without cause (as that phrase is defined in the Management Services Agreement) on the terms and conditions set forth herein.

NOW THEREFORE, in consideration of the mutual covenants and releases set forth herein, and for other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties each intending to be legally bound, hereby agree as follows:

1. ***Termination of Management Services Agreement***. The Parties hereby agree that the Management Services Agreement is hereby terminated without cause (as that phrase is defined in the Management Services Agreement), effective as of the Effective Date, and of no further force and effect. Except as expressly provided herein, none of the Parties shall have any further rights or obligations under or otherwise in respect of the Management Services Agreement, notwithstanding anything in the Management Services Agreement to the contrary (except that the recordkeeping provisions in Article I, Section 1(c)(1) of the Management Services Agreement, and the confidentiality provisions in Article X, Section 1(c)(1) of the Management Services Agreement shall continue in full force and effect).

2. ***Earnout Payment and Minimum Quarterly Payments***. Notwithstanding anything to the contrary in the Asset Purchase Agreement or the Management Services Agreement, the Parties hereby further agree that, from and after the Effective Date:

(a) the aggregate amount of earned but unpaid Earnout Payments (as defined in the Asset Purchase Agreement) shall be $725,000; and

(b) ResearchDx shall have no further right to receive, and neither LucidDx Labs nor Lucid Diagnostics shall have any further obligation to pay to ResearchDx or any of its affiliates, any Minimum Quarterly Payment or portion thereof pursuant to the Asset Purchase Agreement or the Management Services Agreement.

ResearchDx hereby directs Lucid Diagnostics to issue to Endeavour Investments, LLC 553,436 shares of Lucid Diagnostics' common stock, in full satisfaction of LucidDx Labs' and Lucid Diagnostics' obligations with respect to Earnout Payments. Lucid Diagnostics hereby agrees to make such issuance within fifteen (15) days of the Effective Date.

3. ***Mutual Releases***.

(a) Each of Lucid Diagnostics and LucidDx Labs, on behalf of itself, their respective affiliates, and its and their respective affiliates' officers, directors, successors or assigns, licensees, agents, employees and all those acting under their direction or pursuant to their control (collectively, the "***Lucid Release Parties***"), releases and discharges ResearchDx, its affiliates and its and its affiliates' officers, directors, successors or assigns, licensees, agents, employees and all those acting under their direction or pursuant to their control (the "***ResearchDx Release Parties***"), from any and all actions, causes of action, rights of action, damages, suits, notes, debts, costs, sums of money, obligations, accounts, liabilities, covenants, contracts, controversies, agreements, promises, losses, damages, judgments, claims, and demands whatsoever (collectively, "***Claims***"), whether known or unknown, liquidated or contingent, foreseeable or unforeseeable, and whether or not alleged or made in law or equity, that any of the Lucid Release Parties has, owns or holds, or might have had, owned or held, whether individually, representatively, derivatively or in any other capacity, from the beginning of the world to the Effective Date, arising from or otherwise related to the Management Services Agreement or the termination thereof.

(b) ResearchDx, on behalf of itself and each of the other ResearchDx Release Parties, releases and discharges each of the Lucid Release Parties from any and all Claims, whether known or unknown, liquidated or contingent, foreseeable or unforeseeable, and whether or not alleged or made in law or equity, that any of the ResearchDx Release Parties has, owns or holds, or might have had, owned or held, whether individually, representatively, derivatively or in any other capacity, from the beginning of the world to the Effective Date, arising from or otherwise related to the Management Services Agreement or the termination thereof.

(c) The foregoing mutual releases shall not release any Claims (i) to enforce this Agreement or (ii) that may arise from or otherwise be related to the Asset Purchase Agreement Lease Agreement; provided that it is agreed and understood that the foregoing mutual releases shall release any Claims in respect of the Asset Purchase Agreement related to Earnout Payments or Minimum Quarterly Payments.

4. ***No Admission of Liability; No Precedent Regarding Future Disputes***. The Parties agree that this Termination Agreement does not constitute an admission of liability by any Party, it does not constitute any factual or legal precedent or finding whatsoever with respect to any future disputes, and it may not be used as evidence in any subsequent proceeding of any kind, except in an action alleging breach of this Termination Agreement.

5. ***Confidentiality***. Except as expressly permitted in this Section 5, none of the Parties shall, and they shall not permit any of their respective affiliates or their and their respective affiliates' officers, directors, employees, agents and attorneys (collectively, "Representatives") to, make any press releases or other public or private communications about this Termination Agreement. The only such use, disclosures and communications permitted are as follows:

(a) The Parties are permitted to disclose that "the Parties have mutually agreed to terminate the Management Services Agreement without cause" (and not for any other reason);

(b) The Parties are permitted to disclose the terms of the this Termination Agreement to their respective officers, directors, attorneys, , and accountants or other financial advisors, and to their respective parent companies only to the extent necessary for the conduct of the parties' respective financial affairs; provided that all such persons are informed of the confidential nature of the Termination Agreement and agree to keep such information confidential;

(c) The Parties, and their successors and assigns, are permitted to disclose the terms of this Termination Agreement pursuant to a subpoena issued by a court of competent jurisdiction or a legislative body, provided that the disclosing party shall immediately inform the non-disclosing parties upon receipt of the subpoena, by means of written notice, and that the disclosing party shall apprise the third party seeking disclosure of the confidential nature of the information and shall use its good faith efforts to secure and assure the confidentiality and non-disclosure of the information to and/or by the third party;

(d) The Parties are permitted to disclose the terms of this Termination Agreement to the extent necessary to enforce its rights hereunder, but only in a confidential mediation or arbitration; and

(e) Lucid Diagnostics and its parent company, PAVmed Inc., a Delaware corporation, are permitted to disclose the fact of and terms of this Termination Agreement to the extent necessary to comply with any securities laws or regulations applicable to either of them as a publicly-traded company. Any such disclosure must say "the Parties have mutually agreed to terminate the Management Services Agreement without cause."

The Parties agree that any breach of the non-use, non-disclosure and other confidentiality obligations set forth herein shall result in immediate and irreparable harm and each Party acknowledges that there may be no adequate remedy at law for such breach or disclosure and that in the event thereof the non-breaching party shall be entitled to equitable relief in the nature of injunction and to all other available relief at law or in equity.

6. ***Non-Solicitation***. Each of Lucid Diagnostics and LucidDx Labs agrees that from the Effective Date through the one-year anniversary thereof (the "***Restricted Period***"), each of them will not directly or indirectly, for its own account or for the account of others, hire, urge, induce, entice, or in any manner whatsoever solicit any ResearchDx employee to leave the employment of ResearchDx or any of its affiliates. ResearchDx agrees that during the Restricted Period, it will not directly or indirectly, for its own account or for the account of others, hire, urge, induce, entice, or in any manner whatsoever solicit any Lucid Diagnostics or LucidDx Labs employee to leave the employment of Lucid Diagnostics, LucidDx Labs or any of their respective affiliates.

7. ***Non-Disparagement***. Each of Lucid Diagnostics and LucidDx shall not, and shall use its commercially reasonable efforts to cause its directors, managers, officers, employees and affiliates not to, disparage or make any false or inaccurate statements (whether in oral, written, electronic or other form) regarding ResearchDx or any of its affiliates. ResearchDx shall not, and shall use its commercially reasonable efforts to cause its directors, managers, officers, employees and affiliates not to, disparage or make any false or inaccurate statements (whether in oral, written, electronic or other form) regarding Lucid Diagnostics, LucidDx Labs or any of their respective affiliates. Notwithstanding the foregoing, nothing in this Section 7 shall prohibit the making of truthful statements in the course of sworn testimony in any legal proceedings (including, without limitation, depositions in connection with such proceedings) or otherwise as required by law.

8. ***Representations***. Each of the Parties represents and warrants to the other Party that:

(a) it has entered into this Termination Agreement and executed this Termination Agreement voluntarily and willingly;

(b) it has relied upon the legal advice of its attorneys, who are the attorneys of its own choice and that the terms of this Termination Agreement have been completely read and explained to it by its attorneys, and that those terms are fully understood and voluntarily accepted by it; and

(c) it is the sole and exclusive owner of the claims it is releasing hereby, it has the sole and exclusive right and is duly authorized to settle and release the other Party from such claims, and it has not assigned or otherwise transferred to any other party any such claims being settled and/or released pursuant to this Termination Agreement.

9. ***Governing Law***. This Termination Agreement shall be governed by the laws of the State of New York, without reference to conflict of law principles, and any dispute arising under this Termination Agreement shall be adjudicated in accordance with the dispute resolution provisions set forth in the Management Services Agreement. The Parties acknowledge and waive any challenge to the exercise of jurisdiction over them by such an arbitration tribunal in connection with any dispute arising from or related to this Termination Agreement.

10. ***Amendments***. This Termination Agreement may not be modified except in writing signed by all Parties hereto.

11. ***Further Assurance***. The Parties hereto agree to execute such other writings, documents and instruments as may be necessary or desirable to effectuate the purposes of this Termination Agreement but in the event of any difference between this Termination Agreement and such other writings, the provisions herein shall control.

12. ***Counterparts***. This Termination Agreement may be executed in counterparts, each one of which may be deemed the original.

[*signature page follows*]

IN WITNESS WHEREOF, the Parties hereto have caused this Termination Agreement to be duly executed in duplicate counterparts, each of which shall be deemed to constitute an original, effective as of the date first above written.

LUCID DIAGNOSTICS INC.

By: _____
Name: Lishan Aklog, M.D.
Title: Chairman and Chief Executive Officer

LUCIDDX LABS INC.

By: _____
Name: Lishan Aklog, M.D.
Title: Chairman and Chief Executive Officer

RESEARCHDX, INC.

By: _____
Name:
Title:

Exhibit 14.1

PAVMED INC.

CODE OF ETHICS

1. Introduction

The Board of Directors of PAVmed Inc. has adopted this code of ethics (the "Code"), which is applicable to all directors, officers and employees, to:

- promote honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationships;
- promote the full, fair, accurate, timely and understandable disclosure in reports and documents that the Company files with, or submits to, the Securities and Exchange Commission (the "SEC"), as well as in other public communications made by or on behalf of the Company;
- promote compliance with applicable governmental laws, rules and regulations;
- deter wrongdoing; and
- require prompt internal reporting of breaches of, and accountability for adherence to, this Code.

This Code may be amended only by resolution of the Company's Board of Directors. In this Code, references to the "Company" mean PAVmed Inc. (the "Parent") and, in appropriate context, the Parent's subsidiaries.

2. Honest, Ethical and Fair Conduct

Each person owes a duty to the Company to act with integrity. Integrity requires, among other things, being honest, fair and candid. Deceit, dishonesty and subordination of principle are inconsistent with integrity. Service to the Company never should be subordinated to personal gain and advantage.

Each person must:

- Act with integrity, including being honest and candid while still maintaining the confidentiality of the Company's information where required or in the Company's interests.
- Observe all applicable governmental laws, rules and regulations.
- Comply with the requirements of applicable accounting and auditing standards, as well as Company policies, in order to maintain a high standard of accuracy and completeness in the Company's financial records and other business-related information and data.

- Adhere to a high standard of business ethics and not seek competitive advantage through unlawful or unethical business practices.
- Deal fairly with the Company's customers, suppliers, competitors and employees.
- Refrain from taking advantage of anyone through manipulation, concealment, abuse of privileged information, misrepresentation of material facts or any other unfair-dealing practice.
- Protect the assets of the Company and ensure their proper use.
- Refrain from taking for themselves personally opportunities that are discovered through the use of corporate assets or using corporate assets, information or position for general personal gain outside the scope of employment with the Company.
- Avoid conflicts of interest, wherever possible, except under guidelines or resolutions approved by the Board of Directors (or the appropriate committee of the Board). Anything that would be a conflict for a person subject to this Code also will be a conflict if it is related to a member of his or her family or a close relative. Examples of conflict of interest situations include, but are not limited to, the following:
    - any significant ownership interest in any supplier or customer;
    - any consulting or employment relationship with any customer, supplier or competitor;
    - any outside activity which results in the individual having other duties, responsibilities or obligations that run counter to his or her duty to the Company;
    - the receipt of any money, non-nominal gifts or excessive entertainment from any company with which the Company has current or prospective business dealings;
    - being in the position of supervising, reviewing or having any influence on the job evaluation, pay or benefit of any close relative;
    - selling anything to the Company or buying anything from the Company, except on the same terms and conditions as comparable officers or directors are permitted to so purchase or sell; and
    - any other circumstance, event, relationship or situation in which the personal interest of a person subject to this Code interferes – or even appears to interfere – with the interests of the Company as a whole.

3. Disclosure

The Company strives to ensure that the contents of and the disclosures in the reports and documents that the Company files with the SEC and other public communications shall be full, fair, accurate, timely and understandable in accordance with applicable disclosure standards, including standards of materiality, where appropriate. Each person must:

- not knowingly misrepresent, or cause others to misrepresent, facts about the Company to others, whether within or outside the Company, including to the Company's independent auditors, governmental regulators, self-regulating organizations and other governmental officials, as appropriate; and

- in relation to his or her area of responsibility, properly review and critically analyze proposed disclosure for accuracy and completeness.

In addition to the foregoing, the Chief Executive Officer and Chief Financial Officer of the Parent and each subsidiary of Parent (or persons performing similar functions), and each other person that typically is involved in the financial reporting of the Company must familiarize himself or herself with the disclosure requirements applicable to the Company as well as the business and financial operations of the Company.

Each person must promptly bring to the attention of the Chairman of the Audit Committee of Parent's Board of Directors (or the Chairman of the Parent's Board of Directors if no Audit Committee exists) any information he or she may have concerning (a) significant deficiencies in the design or operation of internal and/or disclosure controls which could adversely affect the Company's ability to record, process, summarize and report financial data or (b) any fraud, whether or not material, that involves management or other employees who have a significant role in the Company's financial reporting, disclosures or internal controls.

4. Compliance

It is the Company's obligation and policy to comply with all applicable governmental laws, rules and regulations. It is the personal responsibility of each person to, and each person must, adhere to the standards and restrictions imposed by those laws, rules and regulations, including those relating to accounting and auditing matters.

5. Reporting and Accountability

The Board of Directors or Audit Committee, if one exists, of the Parent is responsible for applying this Code to specific situations in which questions are presented to it and has the authority to interpret this Code in any particular situation. Any person who becomes aware of any existing or potential breach of this Code is required to notify the Chairman of the Board of Directors or Audit Committee promptly. Failure to do so is itself a breach of this Code.

Specifically, each person must:

- Notify the Chairman promptly of any existing or potential violation of this Code.
- Not retaliate against any other person for reports of potential violations that are made in good faith.

The Company will follow the following procedures in investigating and enforcing this Code and in reporting on the Code:

- The Board of Directors or Audit Committee, if one exists, will take all appropriate action to investigate any breaches reported to it.
- If the Audit Committee, if one exists, determines (by majority decision) that a breach has occurred, it will inform the Board of Directors.
- Upon being notified that a breach has occurred, the Board (by majority decision) will take or authorize such disciplinary or preventive action as it deems appropriate, after consultation with the Audit Committee (if one exists) and/or General Counsel, up to and including dismissal or, in the event of criminal or other serious violations of law, notification of the SEC or other appropriate law enforcement authorities.

No person following the above procedure shall, as a result of following such procedure, be subject by the Company or any officer or employee thereof to discharge, demotion suspension, threat, harassment or, in any manner, discrimination against such person in terms and conditions of employment.

6. Waivers and Amendments

Any waiver (defined below) or an implicit waiver (defined below) from a provision of this Code for the principal executive officer, principal financial officer, principal accounting officer or controller, and persons performing similar functions or any amendment (as defined below) to this Code is required to be disclosed in the Company's Annual Report on Form 10-K or in a Current Report on Form 8-K filed with the SEC.

A "waiver" means the approval by the Company's Board of Directors of a material departure from a provision of the Code. An "implicit waiver" means the Company's failure to take action within a reasonable period of time regarding a material departure from a provision of the Code that has been made known to an executive officer of the Company. An "amendment" means any amendment to this Code other than minor technical, administrative or other non-substantive amendments hereto.

All persons should note that it is <u>not</u> the Company's intention to grant or to permit waivers from the requirements of this Code. The Company expects full compliance with this Code.

7. Other Policies and Procedures

Any other policy or procedure set out by the Company in writing or made generally known to employees, officers or directors of the Company prior to the date hereof or hereafter are separate requirements and remain in full force and effect.

8. Inquiries

All inquiries and questions in relation to this Code or its applicability to particular people or situations should be addressed to the Parent's Secretary.

Exhibit 21.1

List of Subsidiaries of the Registrant
(PAVmed Inc. DE - 47-1214177)

Subsidiary Legal Entity Name	State of Incorporation
Lucid Diagnostics Inc. (82-5488042) - *Majority-Owned Subsidiary of PAVmed Inc.*	Delaware (Incorporated May 8, 2018)
LucidDx Labs Inc. (87-41661458) - *Wholly-Owned Subsidiary of Lucid Diagnostics Inc.*	Delaware (Incorporated November 10, 2021)
Veris Health Inc. (87-0983820) - *Majority-Owned Subsidiary of PAVmed Inc.*	Delaware (Incorporated April 7, 2021)
Oncodisc Inc (82-4885133) *Wholly-Owned Subsidiary of Veris Health Inc.*	Delaware (Incorporated February 22, 2018)
PAVmed Subsidiary Corp Inc. (81-1637646) *Wholly-owned Subsidiary of PAVmed Inc.*	Delaware (Incorporated January 23, 2015)
CapNostics LLC (84-4876240) *Wholly-owned Subsidiary of Lucid Diagnostics Inc.*	North Carolina (Established January 20, 2020)

Exhibit 23.1

Independent Registered Public Accounting Firm's Consent

We consent to the incorporation by reference in the Registration Statement of PAVmed Inc. on Form S-1 [Files No. 333-222581, 333-222234, 333-216963, and 333-214288], Form S-3 [Files No. 333-261814, 333-235335, 333-229372, 333-227718, and 333-221406] and Form S-8 [Files No. 333-269701, 333-269700, 333-264272, 333-264271, 333-258459, 333-258458, 333-256343, 333-248529, and 333-231674] of our report dated March 13, 2023, with respect to our audits of the consolidated financial statements of PAVmed Inc. and Subsidiaries as of December 31, 2022 and 2021 and for each of the two years in the period ended December 31, 2022, which report is included in this Annual Report on Form 10-K of PAVmed Inc. for the year ended December 31, 2022.

/s/ Marcum LLP

Marcum LLP
New York, NY
March 13, 2023

Exhibit 31.1

CERTIFICATION BY PRINCIPAL EXECUTIVE OFFICER

I, Lishan Aklog, M.D., certify that:

1 I have reviewed this Annual Report on Form 10-K of PAVmed Inc. and Subsidiaries;

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

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

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

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

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

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

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

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

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

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

Date: March 13, 2023

By: */s/ Lishan Aklog, M.D.*

Lishan Aklog, M.D.,
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION BY PRINCIPAL FINANCIAL OFFICER

I, Dennis M. McGrath, certify that:

1 I have reviewed this Annual Report on Form 10-K of PAVmed Inc. and Subsidiaries;

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

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

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

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

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

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

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

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

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

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

Date: March 13, 2023

By: */s/ Dennis M. McGrath*
Dennis M. McGrath
President & Chief Financial Officer
(Principal Financial and Accounting Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of PAVmed Inc. and Subsidiaries (the "Company") for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Lishan Aklog, M.D., Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: March 13, 2023

By: */s/ Lishan Aklog, M.D.*
Lishan Aklog, M.D.
Chief Executive Officer
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report on Form 10-K of PAVmed Inc. and Subsidiaries (the "Company") for the year ended December 31, 2022 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Dennis M. McGrath, President & Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that to his knowledge:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

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

Date: March 13, 2023

By: */s/ Dennis M. McGrath*
Dennis M. McGrath
President & Chief Financial Officer
(Principal Financial and Accounting Officer)