UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-Q

(Mark One)
☒ QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the quarterly period ended March 31, 2023

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: 001-39421

ORCHESTRA BIOMED HOLDINGS, INC.
(Exact name of registrant as specified in its charter)

Delaware	**92-2038755**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**

150 Union Square Drive
New Hope, Pennsylvania 18938
(Address of principal executive offices, including zip code)

Registrant's telephone number, including area code: (215) 862-5797

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, par value $0.0001 per share	OBIO	The Nasdaq Global Market

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

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

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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 filer	☐
Non-accelerated filer	☒	Smaller reporting company	☒
		Emerging growth company	☒

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

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

As of May 9, 2023, the registrant had 35,755,084 shares of common stock, $0.0001 par value per share, outstanding.

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SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This Quarterly Report on Form 10-Q contains forward-looking statements. All statements other than statements of historical facts contained in this report, including statements regarding our future results of operations and financial position, business strategy, product candidates, planned preclinical studies and clinical trials, results of clinical trials, research and development costs, regulatory approvals, timing, and likelihood of success, as well as plans and objectives of management for future operations, are forward-looking statements. These statements involve known and unknown risks, uncertainties, and other important factors that are in some cases beyond our control and may cause our actual results, performance, or achievements to be materially different from any future results, performance, or achievements expressed or implied by the forward-looking statements.

In some cases, you can identify forward-looking statements by terms such as “may,” “will,” “should,” “would,” “expect,” “plan,” “anticipate,” “could,” “intend,” “target,” “project,” “contemplate,” “believe,” “estimate,” “predict,” “potential,” or “continue” or the negative of these terms or other similar expressions. Forward-looking statements contained in this report include, but are not limited to, statements about:

- our ability to raise financing in the future;
- our ability to realize the anticipated benefits of the Business Combination (as defined in Part I, Item 1, Note 3, “Business Combination,” in our notes to unaudited condensed consolidated financial statements in this Quarterly Report on Form 10-Q);
- our success in retaining or recruiting, or changes required in, our officers, key employees or directors;
- our ability and/or the ability of third-party vendors and partners to manufacture our product candidates;
- our ability to source critical components or materials for the manufacture of our product candidates;
- our ability to achieve and sustain profitability;
- our ability to achieve our projected development and commercialization goals;
- the rate of progress, costs and results of our clinical studies and research and development activities;
- market acceptance of our product candidates, if approved;
- our ability to compete successfully with larger companies in a highly competitive industry;
- changes in our operating results which make future operations results difficult to predict;
- existing loan and security agreement covenants that may restrict our business and financing activities;
- serious adverse events, undesirable side effects that could halt the clinical development, regulatory approval or certification, of our product candidates;
- our ability to manage growth or control costs related to growth;
- economic conditions that may adversely affect our business, financial condition and stock price;
- our reliance on third parties to drive successful marketing and sale of our initial product candidates;
- our reliance on third parties to manufacture and provide important materials and components for our products and product candidates;
- our and our competitor’s abilities to obtain necessary regulatory approvals and certifications for our product candidates in an uncomplicated and inexpensive manner;
- our ability to maintain compliance with regulatory and post-marketing requirements;
- adverse medical events, failure or malfunctions in connection with our product candidates and possible subjection to regulatory sanctions;
- healthcare costs containment pressures and legislative or administrative reforms which affect coverage and reimbursement practices of third-party payors;
- our ability to protect or enforce our intellectual property, unpatented trade secrets, know-how and other proprietary technology;
- our ability to obtain necessary intellectual property rights from third parties;

- our ability to protect our trademarks, trade names and build our names recognition;
- our ability to maintain the listing of our common stock on The Nasdaq Stock Market LLC ("Nasdaq"); and
- the success of our licensing agreements; and
- our public securities' potential liquidity and trading.

We have based these forward-looking statements largely on our current expectations and projections about our business, the industry in which we operate and financial trends that we believe may affect our business, financial condition, results of operations, and prospects, and these forward-looking statements are not guarantees of future performance or development. These forward-looking statements speak only as of the date of this report and are subject to a number of risks, uncertainties, and assumptions described under the heading "Item 1A. Risk Factors" in Part II of this Quarterly Report on Form 10-Q," as well as elsewhere in this Quarterly Report on Form 10-Q. Because forward-looking statements are inherently subject to risks and uncertainties, some of which cannot be predicted or quantified, you should not rely on these forward-looking statements as predictions of future events. The events and circumstances reflected in our forward-looking statements may not be achieved or occur and actual results could differ materially from those projected in the forward-looking statements. We do not plan to publicly update or revise any forward-looking statements contained herein whether as a result of any new information, future events, or otherwise.

In addition, statements that "we believe" and similar statements reflect our beliefs and opinions on the relevant subject. These statements are based upon information available to us as of the date of this report, and while we believe such information forms a reasonable basis for such statements, such information may be limited or incomplete, and our statements should not be read to indicate that we have conducted an exhaustive inquiry into, or review of, all potentially available relevant information. These statements are inherently uncertain, and you are cautioned not to unduly rely upon these statements.

SUMMARY RISK FACTORS

The below summary of risk factors provides an overview of many of the risks we are exposed to in the normal course of our business activities. As a result, the below summary risks do not contain all of the information that may be important to you, and you should read the summary risks together with the more detailed discussion of risks set forth under the heading "Item 1A. Risk Factors" in Part II of this Quarterly Report on Form 10-Q, as well as elsewhere in this Quarterly Report on Form 10-Q. Additional risks, beyond those summarized below or discussed elsewhere in this Quarterly Report on Form 10-Q, may apply to our activities or operations as currently conducted or as we may conduct them in the future or in the markets in which we operate or may in the future operate. Consistent with the foregoing, we are exposed to a variety of risks, including risks associated with the following:

Risks Related to Our Business and Products

- We have a history of net losses, and we expect to continue to incur losses for the foreseeable future. If we ever achieve profitability, we may not be able to sustain it.
- If we do not achieve our projected development and commercialization goals, our business may be harmed.
- The clinical study process required to obtain regulatory approvals or certifications carries substantial risks and is lengthy and expensive with uncertain outcomes. If our clinical studies are unsuccessful or significantly delayed, or if we do not complete our clinical studies, our business may be harmed.
- Even if we obtain all necessary U.S. Food and Drug Administration (the "FDA") approvals, our product candidates may not achieve or maintain market acceptance and may be subject to additional regulatory requirements post-approval.
- We may be unable to compete successfully with larger companies in our highly competitive industry.
- Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide.
- Our loan and security agreement contains operating covenants and restrictions that may restrict our business and financing activities.

- The sizes of the markets for product candidates have not been established with precision and may be smaller than we estimate.

- The long-term macroeconomic effects of the COVID-19 pandemic and any future pandemic or epidemic could adversely impact our business, including our clinical studies and financial condition.

- Our product candidates have in the past and may in the future be associated with serious adverse events, undesirable side effects or have other properties that could halt their clinical development, prevent their regulatory approval or certification, limit their commercial potential or result in significant negative consequences.

- If we do not manage our growth or control costs related to growth, our results of operations will suffer.

- Our information technology systems, or those of any of our contract research organizations ("CROs"), manufacturers, other contractors, consultants, collaborators or potential future collaborators, may fail or suffer security or data privacy breaches or other unauthorized or improper access to, use of, or destruction of our proprietary or confidential data, employee data, or personal data, which could result in additional costs, loss of revenue, significant liabilities, harm to our brand and material disruption of our operations.

Risks Related to Our Reliance on Third Parties

- We are, and expect to continue to be, highly dependent on partners to drive the successful marketing and sale of our initial product candidates. There is no assurance that we will be able to form and properly manage partnerships. There is no assurance that partnerships will be successful.

- We expect to be highly dependent on partners and third-party vendors to manufacture and provide important materials and components for our products and product candidates. There is no assurance that we will be able to properly manage our supply chain. Further, we currently do not have redundancy built into our supply chain.

- The failure of our manufacturing partners and component suppliers to meet regulatory quality standards applicable to their manufacturing processes could have an adverse effect on our business, financial condition and results of operations.

- We have limited pharmaceutical manufacturing experience and our contract manufacturing organizations ("CMOs") may experience development or manufacturing problems or delays in producing our products and planned or future products that could limit or prevent the potential growth of our revenue or increase our losses.

Risks Related to Government Regulation and Our Industry

- Regulatory compliance is expensive, complex and uncertain, and approvals or certifications can often be denied or significantly delayed. We may not obtain the necessary approvals or certifications and failure to obtain timely regulatory approval or certification, if at all, would adversely affect our business.

- Even if we obtain regulatory approval or certification for a product candidate, our products will remain subject to regulatory scrutiny and post-marketing requirements. Failure to comply with post-marketing regulatory requirements could subject us to enforcement actions, including substantial penalties, and might require us to recall or withdraw a product from the market.

- Our medical device products, if approved or certified, may cause or contribute to adverse medical events or be subject to failures or malfunctions that we are required to report to the FDA or similar foreign regulatory authorities, and if we fail to do so, we would be subject to sanctions that could harm our reputation, business, financial condition and results of operations. The discovery of serious safety issues with our products, or a recall of our products either voluntarily or at the direction of the FDA or another governmental authority, could have a negative impact on us.

- Virtue Sirolimus AngioInfusion Balloon ("Virtue SAB") is a drug/device combination, which may result in additional regulatory and other risks.

- If the FDA does not conclude that SirolimusEFR as a standalone product candidate satisfies the requirements for the Section 505(b)(2) regulatory approval pathway, or if the requirements for SirolimusEFR under Section 505(b)(2) are not as we expect, the approval pathway for SirolimusEFR may take significantly longer, cost significantly more and entail significantly greater complications and risks than anticipated, and in either case may not be successful.

- Healthcare cost-containment pressures and legislative or administrative reforms resulting in restrictive coverage and reimbursement practices of third-party payors could decrease the demand for our products, the prices that customers are willing to pay for those products and the number of procedures performed using our devices, which could have an adverse effect on our business.

Risks Related to Our Intellectual Property

- We may not effectively be able to protect or enforce our intellectual property, which could have a material adverse effect on our business, financial condition, results of operations and prospects.

- If we cannot protect and control unpatented trade secrets, know-how and other proprietary technology, we may suffer competitive harm.

- Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time.

PART I—FINANCIAL INFORMATION

Item 1. Financial Statements.

ORCHESTRA BIOMED HOLDINGS, INC.
Condensed Consolidated Balance Sheets
(in thousands, except share and per share data)
(Unaudited)

	March 31, 2023	December 31, 2022
ASSETS		
CURRENT ASSETS:		
Cash and cash equivalents	$ 18,695	$ 19,784
Marketable securities	108,438	63,915
Strategic investments, current portion	100	86
Accounts receivable, net	76	96
Inventory	232	276
Prepaid expenses and other current assets	2,339	533
Total current assets	129,880	84,690
Property and equipment, net	1,453	1,489
Right-of-use assets	2,032	2,187
Strategic investments, less current portion	2,495	2,495
Deposits and other assets	421	4,711
TOTAL ASSETS	$ 136,281	$ 95,572
LIABILITIES AND STOCKHOLDERS' EQUITY		
CURRENT LIABILITIES:		
Accounts payable	$ 2,765	$ 3,968
Accrued expenses and other liabilities	3,256	5,376
Operating lease liability, current portion	711	697
Warrant liability	—	2,089
Deferred revenue, current portion	5,325	6,436
Total current liabilities	12,057	18,566
Deferred revenue, less current portion	13,195	13,103
Loan payable, less current portion	9,527	9,490
Operating lease liability, less current portion	1,500	1,683
Other long-term liabilities	249	196
TOTAL LIABILITIES	36,528	43,038
STOCKHOLDERS' EQUITY		
Preferred stock, $0.0001 par value per share; 10,000,000 shares authorized; none issued or outstanding at March 31, 2023 and December 31, 2022.	—	—
Common stock, $0.0001 par value per share; 340,000,000 shares authorized; 31,741,147 and 20,187,850 shares issued and outstanding as of March 31, 2023 and December 31, 2022, respectively.	3	2
Additional paid-in capital	310,459	252,274
Accumulated other comprehensive loss	(35)	(8)
Accumulated deficit	(210,674)	(199,734)
TOTAL STOCKHOLDERS' EQUITY	99,753	52,534
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$ 136,281	$ 95,572

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

ORCHESTRA BIOMED HOLDINGS, INC.
Condensed Consolidated Statements of Operations and Comprehensive Loss
(in thousands, except share and per share data)
(Unaudited)

	Three Months Ended March 31,	
	2023	**2022**
Revenue:		
Partnership revenue	$ 1,019	$ 716
Product revenue	145	150
Total revenue	1,164	866
Expenses:		
Cost of product revenues	44	42
Research and development	8,254	3,474
Selling, general and administrative	4,411	2,478
Total expenses	12,709	5,994
Loss from operations	(11,545)	(5,128)
Other income (expense):		
Interest income (expense), net	885	(236)
Loss on fair value adjustment of warrant liability	(294)	(145)
Gain (loss) on fair value of strategic investments	14	(220)
Total other income (expense)	605	(601)
Net loss	$ (10,940)	$ (5,729)
Net loss per share		
Basic and diluted	$ (0.40)	$ (0.62)
Weighted-average shares used in computing net loss per share, basic and diluted	27,643,549	9,225,058
Comprehensive loss		
Net loss	$ (10,940)	$ (5,729)
Unrealized loss on marketable securities	(27)	—
Comprehensive loss	$ (10,967)	$ (5,729)

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

ORCHESTRA BIOMED HOLDINGS, INC.
Condensed Consolidated Statements of Stockholders' Equity (Deficit)
(in thousands, except share and per share data)
(Unaudited)

	Convertible Preferred Stock		Common Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Capital	(Loss)	Deficit	(Deficit)
Balance, January 1, 2023 (as previously reported)	35,694,179	$ 165,923	2,522,214	$ —	$ 86,353	$ (8)	$ (199,734)	$ (113,389)
Retroactive application of reverse capitalization (Note 3)	(35,694,179)	(165,923)	17,665,636	2	165,922	—		165,924
Balance, January 1, 2023 effect of Merger	—	—	20,187,850	2	252,275	(8)	(199,734)	52,535
Effect of Merger and recapitalization (refer to Note 3)	—	—	11,422,741	1	54,301	—	—	54,302
Reclassification of Legacy Orchestra common stock warrants to stockholders' equity	—	—	—	—	2,373	—	—	2,373
Unrealized loss on marketable securities	—	—	—	—	—	(27)	—	(27)
Stock-based compensation	—	—	—	—	1,489	—	—	1,489
Exercise of stock options	—	—	2,325	—	10	—	—	10
Exercise of warrants	—	—	128,231	—	11	—	—	11
Net loss	—	—	—	—	—	—	(10,940)	(10,940)
Balance, March 31, 2023	—	$ —	31,741,147	$ 3	$ 310,459	$ (35)	$ (210,674)	$ 99,753

	Convertible Preferred Stock		Common Stock		Additional Paid-in	Accumulated Other Comprehensive	Accumulated	Total Stockholders' Equity
	Shares	Amount	Shares	Amount	Capital	(Loss)	Deficit	(Deficit)
Balance, January 1, 2022 (as previously reported)	12,075,976	$ 51,452	2,185,297	$ —	$ 94,894	$ —	$ (166,126)	$ (71,232)
Retroactive application of reverse capitalization (Note 3)	(12,075,976)	(51,452)	6,636,983	1	51,451	—	—	51,452
Balance, January 1, 2022 effect of Merger	—	—	8,822,280	1	146,345	—	(166,126)	(19,780)
Stock-based compensation	—	—	—	—	70	—	—	70
Exercise of stock options	—	—	5,696	—	25	—	—	25
Exercise of warrants	—	—	68,588	—	230	—	—	230
Proceeds from private placement	—	—	1,240,169	—	25,262	—	—	25,262
Net loss	—	—	—	—	—	—	(5,729)	(5,729)
Balance, March 31, 2022	—	$ —	10,136,733	$ 1	$ 171,932	$ —	$ (171,855)	$ 78

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

ORCHESTRA BIOMED HOLDINGS, INC.
Condensed Consolidated Statements of Cash Flows
(in thousands, except share and per share data)
(Unaudited)

	Three Months Ended March 31,	
	2023	**2022**
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net loss	$ (10,940)	$ (5,729)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	71	48
Stock-based compensation	1,489	70
Loss on fair value adjustment of warrant liability	294	145
(Gain) loss on fair value of strategic investments	(14)	220
Accretion and interest related to marketable securities	(1,056)	—
Non-cash lease expense	155	132
Amortization of deferred financing fees	36	55
Changes in operating assets and liabilities:		
Accounts receivable	20	42
Inventory	44	36
Prepaid expenses and other assets	(1,497)	72
Accounts payable, accrued expenses and other liabilities	(1,795)	202
Operating lease liabilities – current and non-current	(169)	99
Deferred revenue	(1,019)	(716)
Net cash used in operating activities	(14,381)	(5,324)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Purchases of property and equipment	(35)	(47)
Purchases of marketable securities	(43,494)	—
Net cash used in investing activities	(43,529)	(47)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Repayment of debt financing, inclusive of debt extinguishment costs	—	(1,000)
Proceeds from exercise of warrants	1	74
Proceeds from exercise of stock options	10	25
Effect of merger, net of transaction costs (Note 3)	56,810	—
Proceeds from Legacy Orchestra Series D-1 Financing	—	27,276
Deferred financing, offering and merger costs	—	(1,611)
Net cash provided by financing activities	56,821	24,764
Net (decrease) increase in cash and cash equivalents	(1,089)	19,393
Cash and cash equivalents, beginning of the period	19,784	9,938
Cash and cash equivalents, end of the period	$ 18,695	$ 29,331
Supplemental Disclosures of Cash Flow Information		
Cash paid during the three months ended March 31:		
Interest	$ 351	$ 89
Non-cash financing activities:		
Deferred offering and merger costs in accounts payable and accrued expenses	—	772

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

1. Organization and Basis of Presentation

Orchestra BioMed Holdings, Inc. (formerly known as Health Sciences Acquisitions Corporation 2) (collectively, with its subsidiaries, "Orchestra" or the "Company") is a biomedical innovation company seeking to provide high-impact solutions for large unmet needs in procedure-based medicine. The Company's partnership-enabled business model focuses on forging strategic collaborations with leading medical device companies to drive successful global commercialization of products it develops. The Company's business model seeks to adapt the strategic partnering tactics widely used by the biopharmaceutical industry to the medical device market. The Company's goal is to accelerate and improve the likelihood of the Company's product candidates reaching patients and providers worldwide by sharing the risks and rewards of developing and commercializing these product candidates with established companies. The Company's flagship product candidates are Virtue Sirolimus AngioInfusion Balloon ("Virtue SAB") for the treatment of artery disease, the leading cause of mortality worldwide, and BackBeat Cardiac Neuromodulation Therapy ("BackBeat CNT") for the treatment of hypertension, a significant risk factor for death worldwide. The Company has additional product candidates in its pipeline and plans to thoughtfully expand its product pipeline in the future through acquisitions, strategic collaborations, licensing and organic development.

Prior to January 26, 2023, the Company was a special purpose acquisition company formed for the purpose of entering into a merger, amalgamation, share exchange, asset acquisition, share purchase, reorganization or similar business combination with one or more businesses or entities. On January 26, 2023 (the "Closing Date"), the Company consummated the business combination contemplated by the Agreement and Plan of Merger, dated as of July 4, 2022 (as amended by Amendment No. 1 to Agreement and Plan of Merger, dated July 21, 2022, and Amendment No. 2 to Agreement and Plan of Merger, dated November 21, 2022, the "Merger Agreement") by and among Health Sciences Acquisitions Corporation 2, a special purpose acquisition company incorporated as a Cayman Islands exempted company in 2020 ("HSAC2"), HSAC Olympus Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of HSAC2 ("Merger Sub"), and Orchestra BioMed, Inc. ("Legacy Orchestra"). Pursuant to the Merger Agreement, (i) HSAC2 deregistered in the Cayman Islands in accordance with the Companies Act (2022 Revision) (As Revised) of the Cayman Islands and domesticated as a Delaware corporation in accordance with Section 388 of the Delaware General Corporation Law (the "Domestication") and (ii) Merger Sub merged with and into Legacy Orchestra, with Legacy Orchestra as the surviving company in the merger and, after giving effect to such merger, continuing as a wholly owned subsidiary of Orchestra (the "Merger" and, together with the Domestication and the other transactions contemplated by the Merger Agreement, the "Business Combination"). As part of the Domestication, the Company's name was changed from "Health Sciences Acquisitions Corporation 2" to "Orchestra BioMed Holdings, Inc." See Note 3 for additional information.

Legacy Orchestra, the Company's wholly owned subsidiary, was incorporated in Delaware in January 2017 and was formed to acquire operating and other assets as well as to raise capital conducted through private placements. In May 2018, Legacy Orchestra concurrently completed its formation mergers (the "Formation Mergers") with Caliber Therapeutics, Inc. ("Caliber"), a Delaware corporation, BackBeat Medical, Inc. ("BackBeat"), a Delaware Corporation, and FreeHold Surgical, Inc. ("FreeHold"), a Delaware corporation.

Caliber

Caliber was incorporated in Delaware in October 2005 and began development of its lead product Virtue SAB in 2008. Virtue SAB is a patented drug/device combination product candidate for the treatment of artery disease that delivers a proprietary extended release formulation of sirolimus called SirolimusEFR to the vessel wall during balloon angioplasty without any coating on the balloon surface or the need for leaving a permanent implant such as a stent in the artery. In 2019, Legacy Orchestra entered into a distribution agreement with Terumo Medical Corporation ("Terumo") for global development and commercialization of Virtue SAB (the "Terumo Agreement") (See Note 4).

BackBeat

BackBeat was incorporated in Delaware in January 2010 and began development of its lead product BackBeat CNT that same year. BackBeat CNT is a patented implantable cardiac stimulation-based treatment for hypertension that is designed to immediately, substantially and persistently lower blood pressure while simultaneously modulating autonomic nervous system responses that normally drive and maintain blood pressure higher. BackBeat is currently in a pre-revenue stage of operations. Refer to Note 5 for details regarding the Exclusive License and Collaboration Agreement, dated as of June 30, 2022, by and among, Legacy Orchestra, BackBeat Medical, LLC and Medtronic, Inc. (an affiliate of Medtronic plc) (the "Medtronic Agreement").

FreeHold

FreeHold was incorporated in Delaware in May 2010 and began development of its hands-free, intracorporeal retractor device for minimally-invasive surgery in 2012. FreeHold is engaged in the development, sales and marketing of its retractor products that provide optimized visual and total surgeon control during laparoscopic and robotic procedures. The Company generated revenue of approximately $145,000 and $150,000 during the three months ended March 31, 2023 and 2022, respectively related to this legacy FreeHold Surgical, Inc. technology.

Basis of Presentation and Liquidity

The accompanying unaudited interim condensed consolidated financial statements have been prepared pursuant to the rules and regulation of the U.S. Securities and Exchange Commission ("SEC") for interim financial reporting. These condensed statements are unaudited and, in the opinion of management, include all adjustments (consisting of normal recurring adjustments and accruals) necessary to fairly present the results of the interim periods. The condensed consolidated balance sheet at December 31, 2022 has been derived from the audited financial statements at that date. Operating results and cash flows for the three months ended March 31, 2023 are not necessarily indicative of the results that may be expected for the fiscal year ended December 31, 2023 or any other future period. Certain information and footnote disclosures normally included in annual financial statements prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") have been omitted in accordance with the rules and regulations for interim reporting of the SEC. These interim condensed consolidated financial statements should be read in conjunction with the audited consolidated financial statements included in our report for the year ended December 31, 2022 together with the related notes thereto, filed as Exhibit 99.1 to the Company's Form 8-K/A filed with the SEC on March 24, 2023.

The Company has a limited operating history and the sales and income potential of its businesses and markets are unproven. As of March 31, 2023, the Company had an accumulated deficit of $210.7 million and has experienced net losses each year since its inception. The Company expects to incur substantial operating losses in future periods and will require additional capital as it seeks to advance its products to commercialization. The Company is subject to a number of risks and uncertainties similar to those of other companies of the same size within the biomedical device industry, such as uncertainty of clinical trial outcomes, uncertainty of additional funding, and history of operating losses.

The Company follows the provisions of Financial Accounting Standards Board ("FASB") Accounting Standards Codification ("ASC") Topic 205-40, *Presentation of Financial Statements — Going Concern*, which requires management to assess the Company's ability to continue as a going concern within one year after the date the financial statements are issued.

Based on the available balance of cash and cash equivalents and marketable securities as of March 31, 2023, management has concluded that sufficient capital is available to fund its operations and meet cash requirements through the one-year period subsequent to the issuance date of these financial statements. Management may consider plans to raise capital beyond the one-year period subsequent to the issuance date of these financial statements through issuance of equity securities, debt securities, and/or additional development and commercialization partnerships for other products within the Company's development pipeline. The source, timing and availability of any future financing will depend principally upon market conditions, and, more specifically, on the progress of the Company's research and development programs.

2. Summary of Significant Accounting Policies

Reverse Recapitalization

The Business Combination is accounted for as a reverse recapitalization in accordance with U.S. GAAP (the "Reverse Recapitalization"). Under this method of accounting, HSAC2 is treated as the "acquired" company and Legacy Orchestra is treated as the acquirer for financial reporting purposes. Accordingly, for accounting purposes, the Business Combination was treated as the equivalent of Legacy Orchestra issuing stock for the net assets of HSAC2, accompanied by a recapitalization. As a result, the consolidated assets, liabilities and results of operations prior to the Reverse Recapitalization are those of Legacy Orchestra. Additionally, the shares and corresponding capital amounts and losses per share, prior to the Business Combination, have been retroactively restated based on shares reflecting the exchange ratio established in the Merger Agreement (the "Exchange Ratio"). For additional information on the Business Combination and the Exchange Ratio, see Note 3 to these unaudited condensed consolidated financial statements.

Emerging Growth Company and Smaller Reporting Company Status

The Company is an "emerging growth company," as defined in Section 2(a) of the Securities Act of 1933 (the "Securities Act"), as modified by the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act")., As such, it is eligible to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that an emerging growth company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. The Company has elected not to opt out of such extended transition period which means that when a standard is issued or revised and it has different application dates for public or private companies, the Company, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of the Company's condensed consolidated financial statements with another public company which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

The Company will remain an emerging growth company until the earliest of (1) the last day of the fiscal year following the fifth anniversary of the closing of the initial public offering of HSAC2, (2) the last day of the fiscal year in which the Company has total annual gross revenue of at least $1.235 billion, (3) the last day of the fiscal year in which the Company is deemed to be a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of the Company Common Stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year, or (4) the date on which the Company has issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

The Company is also a "smaller reporting company" as defined in the Exchange Act. The Company may continue to be a smaller reporting company even after the Company is no longer an emerging growth company. The Company may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) the market value of the Company's voting and non-voting Common Stock held by non-affiliates is less than $250.0 million measured on the last business day of the Company's second fiscal quarter, or (ii)(a) the Company's annual revenue is less than $100.0 million during the most recently completed fiscal year and (b) the market value of the Company's voting and non-voting Common Stock held by non-affiliates is less than $700.0 million measured on the last business day of the Company's second fiscal quarter.

Use of Estimates

The preparation of the condensed consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures in the condensed consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and on assumptions believed to be reasonable under the circumstances. Actual results could differ materially from those estimates. Areas where significant estimates exist include, but are not limited to, the fair value of stock-based compensation, research and development costs incurred, the fair value of the warrant liability, and the estimated costs to complete the combined performance obligation pursuant to the Terumo Agreement (Note 4).

Cash and Cash Equivalents

Cash and cash equivalents are held in banks or in custodial accounts with banks. Cash equivalents are defined as all liquid investments and money market funds with maturity from date of purchase of 90 days or less that are readily convertible into cash.

Marketable Securities

The Company accounts for its marketable securities with remaining maturities of less than one year, or where its intent is to use the investments to fund current operations or to make them available for current operations, as short-term investments. These investments represent debt investments in corporate or government securities that are designated as available-for-sale and are carried at fair value, with unrealized gains and losses reported in stockholders' equity as accumulated other comprehensive income (loss). The disclosed fair value related to the Company's investments is based on market prices from a variety of industry standard data providers and generally represent quoted prices for similar assets in active markets or have been derived from observable market data.

Strategic Investments

Management has made investments in affiliated companies and assesses whether the Company exerts significant influence over its strategic investments. The Company considers the nature and magnitude of its investment, any voting and protective rights it holds, any participation in the governance of the other company, and other relevant factors such as the presence of a collaboration or other business relationships. To date, the Company has concluded that it does not have the ability to exercise significant influence over its strategic investments.

The Company's strategic investments consist of equity investments in common stock of a Motus GI Holdings, Inc. ("Motus GI"), a publicly-held company and related party, and preferred shares of Vivasure Medical Limited ("Vivasure"), a privately-held company and related party. The Company classifies strategic investments on its balance sheet as current assets if the assets are available for use for current operations, and the Company does not have a specific plan to hold the investments for a certain duration of time. The shares held of Motus GI represent equity securities with a readily determinable fair value and are required to be measured at fair value at each reporting period using readily determinable pricing available on a securities exchange, in accordance with the provisions of ASU 2016-01, Recognition and Measurement of Financial Assets and Liabilities. Therefore, the Company categorized the investments as current assets. The investments in Vivasure do not have readily determinable fair values and are recorded at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer. Additionally, as the investments in Vivasure are not readily marketable, the Company categorized the investments as non-current assets. As of March 31, 2023 and December 31, 2022, the carrying value of the investments in Vivasure was $2.5 million.

Fair Value of Financial Instruments

The Company applies ASC 820, *Fair Value Measurement ("ASC 820")*, which establishes a framework for measuring fair value and clarifies the definition of fair value within that framework. ASC 820 defines fair value as an exit price, which is the price that would be received for an asset or paid to transfer a liability in the Company's principal or most advantageous market in an orderly transaction between market participants on the measurement date. The fair value hierarchy established in ASC 820 generally requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. Observable inputs reflect the assumptions that market participants would use in pricing the asset or liability and are developed based on market data obtained from sources independent of the reporting entity. Unobservable inputs reflect the entity's own assumptions based on market data and the entity's judgments about the assumptions that market participants would use in pricing the asset or liability and are to be developed based on the best information available in the circumstances.

The carrying value of the Company's cash and cash equivalents, accounts receivable, prepaid expense, accounts payable and accrued expenses approximate fair value because of the short-term maturity of these financial instruments. In addition, the Company records its investment in Motus GI, marketable securities, and warrant liabilities at fair value. In addition, at March 31, 2023, the Company believed the carrying value of debt approximates fair value as the interest rates were reflective of the rate the Company could obtain on debt with similar terms and conditions. See Note 7 for additional information regarding fair value measurements.

The valuation hierarchy is composed of three levels. The classification within the valuation hierarchy is based on the lowest level of input that is significant to the fair value measurement. The levels within the valuation hierarchy are described below:

Level 1 — Assets and liabilities with unadjusted, quoted prices listed on active market exchanges. Inputs to the fair value measurement are observable inputs, such as quoted prices in active markets for identical assets or liabilities.

Level 2 — Inputs to the fair value measurement are determined using prices for recently traded assets and liabilities with similar underlying terms, as well as direct or indirect observable inputs, such as interest rates and yield curves that are observable at commonly quoted intervals.

Level 3 — Inputs to the fair value measurement are unobservable inputs, such as estimates, assumptions, and valuation techniques when little or no market data exists for the assets or liabilities.

Accounts Receivable and Allowance for Doubtful Accounts

Accounts receivable represent amounts due from customers. The allowance for doubtful accounts is recorded for estimated losses by evaluating various factors, including relative creditworthiness of each customer, historical collections experience and aging of the receivable. As of March 31, 2023 and December 31, 2022, an allowance for doubtful accounts was not deemed necessary.

Inventory

Inventory is stated at the lower of standard cost (which approximates actual cost on a first-in, first-out basis) and net realizable value. Net realizable value represents the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. The Company analyzes its inventory levels and writes down inventory that has become obsolete or has a cost basis in excess of its expected net realizable value or inventory quantities in excess of expected requirements. Excess requirements are determined based on comparison of existing inventories to forecasted sales, with consideration given to inventory shelf life. Expired inventory is disposed of, and the related costs are recognized in cost of goods sold. As of March 31, 2023 and December 31, 2022, an impairment charge as a result of obsolete inventory was not deemed necessary.

Research and Development Prepayments, Accruals and Related Expenses

The Company incurs costs of research and development activities conducted by its third-party service providers, which include the conduct of preclinical and clinical studies. The Company is required to estimate its prepaid and accrued research and development costs at each reporting date. These estimates are made as of the reporting date of the work completed over the life of the individual study in accordance with agreements established with our service providers. The Company determines the estimates of research and development activities incurred at the end of each reporting period through discussion with internal personnel and outside service providers, as to the progress or stage of completion of trials or services, as of the end of the reporting period, pursuant to contracts with the third parties and the agreed upon fee to be paid for such services. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are accepted by the Company or the services are performed. Accruals are recorded for the amounts of services provided that have not yet been invoiced.

Property and Equipment

Property and equipment are stated at cost, net of accumulated depreciation and amortization. Depreciation and amortization is computed using the straight-line method over the estimated useful lives of the respective assets, generally three to five years. Leasehold improvements are amortized over the lesser of their useful life or the remaining life of the lease. When assets are retired or otherwise disposed of, the cost and related accumulated depreciation and amortization are removed from the balance sheet and any resulting gain or loss is reflected in operations in the period realized. Maintenance and repairs are charged to operations as incurred.

Asset category	Depreciable life
Manufacturing equipment	10 years
Office equipment	3 – 7 years
Research and development equipment	7 years

Leases

At the inception of an arrangement, the Company determines whether the arrangement is or contains a lease based on the terms of the arrangement. The Company accounts for a contract as a lease when it has the right to control the asset for a period of time while obtaining substantially all of the asset's economic benefits. The Company determines the initial classification and measurement of its operating right-of-use ("ROU") assets and operating lease liabilities at the lease commencement date, and thereafter if modified. The lease term includes any renewal options that the Company is reasonably assured to exercise. The Company's policy is to not record leases with a lease term of 12 months or less on its balance sheets.

The ROU asset represents the right to use the leased asset for the lease term. The lease liability represents the present value of the lease payments under the lease. The present value of lease payments is determined by using the interest rate implicit in the lease, if that rate is readily determinable; otherwise, the Company uses its estimated secured incremental borrowing rate for that lease term. Lease expense for operating leases is recognized on a straight-line basis over the reasonably assured lease term based on the total lease payments and is included in operating expense in the statements of operations.

Payments due under each lease agreement include fixed and variable payments. Variable payments relate to the Company's share of the lessor's operating costs associated with the underlying asset and are recognized when the event on which those payments are assessed occurs. Variable payments have been excluded from the lease liability and associated right-of-use asset.

The interest rate implicit in lease agreements is typically not readily determinable, and as such, the Company utilizes the incremental borrowing rate to calculate lease liabilities, which is the rate incurred to borrow on a collateralized basis over a similar term an amount equal to the lease payments in a similar economic environment.

Debt Discount and Debt Issuance Costs

Debt discounts and debt issuance costs incurred in connection with the issuance of debt are capitalized and reflected as a reduction to the related debt liability. The costs are amortized to interest expense over the term of the debt using the effective-interest method.

Impairment of Long-Lived Assets

The Company reviews long-lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. Recoverability is measured by comparing the carrying amount to the future net undiscounted cash flows that the assets are expected to generate. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected discounted future net cash flows arising from the asset. The Company has not identified any such impairment losses to date.

Warrants

The Company evaluates its warrants to determine if the contracts qualify as liabilities in accordance with ASC 480-10, *Distinguishing Liabilities from Equity,* and ASC 815, *Derivatives and Hedging* ("ASC 815"). If the warrant is determined to meet the criteria to be liability classified, the warrant liability is marked-to-market each balance sheet date and recorded as a liability, with the change in fair value recorded in the Company's condensed consolidated statements of operations and comprehensive loss as gain (loss) on fair value adjustment of warrant liability within other income or expense.

In bundled transactions, the proceeds received from any debt instruments and liability classified warrants are allocated to the warrant at fair value first, and the residual value is then allocated to the debt instrument. Upon conversion or exercise of a warrant that is subject to liability treatment, the instrument is marked to fair value at the conversion or exercise date and the fair value is reclassified to equity. Equity classified warrants are recorded within additional paid-in capital at the time of issuance at fair value as of the issuance date and are not subject to subsequent remeasurement.

Revenue Recognition

The Company recognizes revenue under the core principle according to ASC 606, *Revenue from Contracts with Customers ("ASC 606")*, to depict the transfer of control to the Company's customers in an amount reflecting the consideration the Company expects to be entitled to. In order to achieve that core principle, the Company applies the following five step approach: (1) identify the contract 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 a performance obligation is satisfied.

The Company's revenues are currently comprised of product revenue from the sale of FreeHold's intracorporeal organ retractors, and partnership revenues from the Terumo Agreement related to the development and commercialization of Virtue SAB.

Product Revenues

Product revenues related to sales of FreeHold's intracorporeal organ retractors are recognized at a point-in-time upon the shipment of the product to the customer, and there are no significant estimates or judgments related to estimating the transaction price. The product revenues consist of a single performance obligation, and the payment terms are typically 30 days. Product revenues are recognized solely in the United States.

Partnership Revenues

To date, the Company's partnership revenues have related to the Terumo Agreement as further described in Note 4. In future periods, partnership revenues may also include revenues related to the Medtronic Agreement as discussed in Note 5.

The Company assessed whether the Terumo Agreement fell within the scope of ASC 808, *Collaborative Arrangements ("ASC 808")* based on whether the arrangement involved joint operating activities and whether both parties have active participation in the arrangement and are exposed to significant risks and rewards. The Company determined that the Terumo Agreement did not fall within the scope of ASC 808. The Company then analyzed the arrangement pursuant to the provisions of ASC 606 and determined that the arrangement represents a contract with a customer and is therefore within the scope of ASC 606.

The promised goods or services in the Terumo Agreement include (i) license rights to the Company's intellectual property, and (ii) research and development services. The Company also has optional additional items in the Terumo Agreement which are considered marketing offers and are accounted for as separate contracts with the customer if such option is elected by the customer, unless the option provides a material right which would not be provided without entering into the contract. Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer. Promised goods or services are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources or (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised goods or services are distinct in the Terumo Agreement, the Company considered factors such as the stage of development of the underlying intellectual property, the capabilities of the customer to develop the intellectual property on their own or whether the required expertise is readily available.

The Company estimates the transaction price for the Terumo Agreement performance obligations based on the amount expected to be received for transferring the promised goods or services in the contract. The consideration includes both fixed consideration and variable consideration. At the inception of the Terumo Agreement, as well as at each reporting period, the Company evaluates the amount of potential payments and the likelihood that the payments will be received. The Company utilizes either the most likely amount method or expected amount method to estimate the amount expected to be received based on which method better predicts the amount expected to be received. If it is probable that a significant revenue reversal would not occur, the variable consideration is included in the transaction price.

The Terumo Agreement contains development and regulatory milestone payments. At contract inception and at each reporting period, the Company evaluates whether the milestones are considered probable of being reached and estimates the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. At the end of each subsequent reporting period, the Company re-evaluates the probability of achievement of such development milestones and any related constraint, and if necessary, adjusts its estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect partnership revenues and earnings in the period of adjustment.

The Terumo Agreement also includes sales-based royalties and the license is deemed to be the predominant item to which the royalties relate. Accordingly, the Company will recognize royalty revenue when the related sales occur. To date, the Company has not recognized any royalty revenue under the arrangement.

The Company has determined that intellectual property licensed to Terumo and the research and development services to be provided through the premarket approval by the U.S. Food and Drug Administration (the "FDA") for the in-stent restenosis ("ISR") indication represent a combined performance obligation that is satisfied over time, and that the appropriate method of measuring progress for purposes of recognizing revenues relates to a proportional performance model that measures the proportional performance based on the costs incurred to date relative to the total costs expected to be incurred through the completion of the performance obligation. The Company evaluates the measure of progress at each reporting period and, if necessary, adjusts the measure of performance and related revenue recognition.

The Company receives payments from Terumo based on billing schedules established in the contract. Such billings for milestone related events have 10-day terms from the date the milestone is achieved, royalty payments are 20-day terms after the close of each quarter, any optional services are 20 days after receipt of an invoice and any sales of the SirolimusEFR are within 30 days after receipt of the shipping invoices. Upfront payments are recorded as deferred revenue upon receipt or when due until the Company performs its obligations under these arrangements. Amounts are recorded as accounts receivable when the right to consideration is unconditional.

Stock-Based Compensation

The Company applies ASC 718-10, *Compensation — Stock Compensation*, which requires the measurement and recognition of compensation expenses for all stock-based payment awards made to employees and directors including employee stock options under the Company's stock plans based on estimated fair values (see Note 11). Each award vests over the subsequent period during which the recipient is required to provide service in exchange for the award (the vesting period). The cost of each award is recognized as an expense in the financial statements over the respective vesting period on a straight-line basis.

Under the requirements of ASU 2018-07, the Company accounts for stock-based compensation to nonemployees under the fair value method, which requires all such compensation to be calculated based on the fair value at the measurement date (generally the grant date) and recognized in the Company's condensed consolidated statements of operations and comprehensive loss over the requisite service period. The Company accounts for forfeitures of stock-based awards as they occur.

Net Loss Per Share Attributable to Common Stockholders

Basic and diluted net loss per share is calculated by dividing net loss by the weighted-average number of shares of common stock outstanding for the period, without consideration of potential dilutive shares of common stock. Since the Company was in a loss position for the periods presented, basic net loss is the same as diluted net loss since the effects of potentially dilutive securities are antidilutive. Potentially dilutive securities include all outstanding warrants, stock options, Earnout Consideration (Note 3) and unvested restricted stock awards. Shares of Company Common Stock outstanding but subject to forfeiture and cancellation by the Company (e.g., the Forfeitable Shares (as defined in Note 3)) are excluded from the weighted-average number of shares until the period in which such shares are no longer subject to forfeiture. In periods in which there is net income, the Company would apply the two-class method to compute net income per share. Under this method, earnings are allocated to common stock and participating securities based on their respective rights to receive dividends, as if all undistributed earnings for the period were distributed. The two-class method does not apply in periods in which a net loss is reported.

Income Taxes

The Company accounts for income taxes using the asset-and-liability method in accordance with ASC 740, *Income Taxes ("ASC 740")*. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on the deferred tax assets and liabilities of a change in tax rate is recognized in the period that includes the enactment date. A valuation allowance is recorded if it is more-likely-than-not that some portion or all the deferred tax assets will not be realized in future periods. At March 31, 2023 and December 31, 2022, the Company recorded a full valuation allowance on its deferred tax assets.

The Company follows the guidance in ASC Topic 740-10 in assessing uncertain tax positions. The standard applies to all tax positions and clarifies the recognition of tax benefits in the financial statements by providing for a two-step approach of recognition and measurement. The first step involves assessing whether the tax position is more-likely-than-not to be sustained upon examination based upon its technical merits. The second step involves measurement of the amount to be recognized. Tax positions that meet the more-likely than-not threshold are measured at the largest amount of tax benefit that is greater than 50% likely of being realized upon ultimate finalization with the taxing authority. The Company recognizes the impact of an uncertain income tax position in the financial statements if it believes that the position is more likely than not to be sustained by the relevant taxing authority. The Company will recognize interest and penalties related to tax positions in income tax expense.

Deferred Offering and Merger Costs

Offering and merger costs, consisting of legal, accounting, printer and filing fees were deferred to be offset against proceeds received when the Business Combination was completed. As of December 31, 2022, there were $4.0 million of deferred transaction costs included in deposits and other assets on the accompanying condensed consolidated balance sheet. Upon the close of the Business Combination, these deferred costs were recorded against net proceeds in additional paid-in capital. For further discussion on the Business Combination, see Note 3.

Defined Contribution Plan

The Company has a defined retirement savings plan under Section 401(k) of the Internal Revenue Code. This plan allows eligible employees to defer a portion of their annual compensation on a pre-tax basis. Effective January 1, 2023, the Company participates in a matching safe harbor 401(k) Plan with a Company contribution of up to 3.5% of each eligible participating employee's compensation. Safe harbor contributions vest immediately for each participant. During the three months ended March 31, 2023, the Company made $113,000 in contributions under this safe harbor 401(k) Plan.

Comprehensive Loss

Comprehensive loss is comprised of net loss and changes in unrealized gains and losses on the Company's available-for-sale investments.

Segment Reporting

Operating segments are defined as components of an entity for which separate financial information is available and that is regularly reviewed by the Chief Operating Decision Maker ("CODM") in deciding how to allocate resources to an individual segment and in assessing performance. The Company's CODM is its Chief Executive Officer. The Company has determined it operates in one segment.

New Accounting Standards

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments — Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. During 2018 and 2019, the FASB also issued subsequent amendments to the initial guidance (collectively, "Topic 326"). Topic 326 requires organizations to measure all expected credit losses for financial instruments held at the reporting date based on historical experience, current conditions, and reasonable and supportable forecasts. The Company adopted ASU 2016-13 as of January 1, 2023. The adoption of ASU 2016-13 did not have a material impact on the Company's condensed consolidated financial statements.

In June 2022, the FASB issued ASU No. 2022-03 — *Fair Value Measurement (ASC 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions*, which clarifies that a contractual restriction on the sale of an equity security is not considered part of the unit of account of the equity security and, therefore, is not considered in measuring fair value. The Company adopted ASU 2022-03 in the second quarter of 2022, and the adoption did not have a material impact on the Company's condensed consolidated financial statements.

3. Business Combination and Recapitalization

On January 26, 2023, Legacy Orchestra and HSAC2 consummated the Business Combination, with Legacy Orchestra surviving as a wholly owned subsidiary of HSAC2. As part of the Business Combination, HSAC2 changed its name to Orchestra BioMed Holdings, Inc. Upon the closing of the Business Combination (the "Closing"), the Company's certificate of incorporation provided for, among other things, a total number of authorized shares of capital stock of 350,000,000 shares, of which 340,000,000 shares were designated common stock, $0.0001 par value per share, and of which 10,000,000 shares were designated preferred stock, $0.0001 par value per share.

The Business Combination is accounted for as a reverse recapitalization in accordance with U.S. GAAP. Under this method of accounting, HSAC2 is treated as the "acquired" company and Legacy Orchestra is treated as the acquirer for financial reporting purposes. Accordingly, for accounting purposes, the Business Combination was treated as the equivalent of Legacy Orchestra issuing stock for the net assets of HSAC2, accompanied by a recapitalization. The net assets of HSAC2 are stated at historical cost, with no goodwill or intangible assets recorded.

In connection with the Business Combination, HSAC 2 Holdings, LLC (the "Sponsor") agreed that 25% or 1,000,000 shares of its shares of common stock of the Company ("Company Common Stock") will be forfeited to the Company (the "Forfeitable Shares") on the first business day following the fifth anniversary of the Closing unless, as to 500,000 shares, the volume-weighted average price of the Company Common Stock is greater than or equal to $15.00 per share over any 20 trading days within any 30-trading day period (the "Initial Milestone Event"), and as to the remaining 500,000 shares, the volume-weighted average price of the Company Common Stock is greater than or equal to $20.00 per share over any 20 trading days within any 30-trading day period (the "Final Milestone Event"). Further, the Sponsor and HSAC2's other initial shareholders prior to HSAC2's initial public offering (the "HSAC2 IPO") agreed to subject (i) the 4,000,000 shares of Company Common Stock issued to HSAC2's initial shareholders prior to the HSAC2 IPO (the "Insider Shares") and (ii) the 450,000 shares of Company Common Stock purchased in a private placement simultaneously with the HSAC2 IPO (the "Private Shares") to a lock-up for up to 12 months following the Closing, and the Sponsor forfeited 50% of its 1,500,000 warrants in HSAC2 purchased upon consummation of the HSAC2 IPO (the "Private Warrants"), comprising 750,000 Private Warrants, for no consideration, immediately prior to the Closing (the "Sponsor Forfeiture"). Pursuant to the terms of the Merger Agreement, immediately following the Sponsor Forfeiture and prior to the Closing, HSAC2 issued 750,000 warrants to purchase Company Common Stock to eleven specified employees and directors of Legacy Orchestra. These new warrants have substantially similar terms to the forfeited Private Warrants, except that they will become exercisable between 24 and 36 months after the Closing.

In connection with the Business Combination, existing Legacy Orchestra stockholders also had the opportunity to elect to participate in an earnout (the "Earnout") pursuant to which each such electing stockholder (an "Earnout Participant") may receive a portion of additional contingent consideration of up to 8,000,000 shares of Company Common Stock in the aggregate ("Earnout Consideration"). Each Earnout Participant agreed to extend their applicable lock-up period from 6 months to 12 months, pursuant to an Earnout Election Agreement and such Earnout Participants will collectively be entitled to receive: (i) 4,000,000 shares of the Earnout Consideration, in the aggregate, in the event that, from the time beginning immediately after the Closing until the fifth anniversary of the Closing Date (the "Earnout Period"), the Initial Milestone Event occurs; and (ii) an additional 4,000,000 shares of the Earnout Consideration, in the aggregate, in the event that, during the Earnout Period, the Final Milestone Event occurs. Approximately, 91% of Legacy Orchestra stockholders elected to participate in the Earnout.

Simultaneously with the execution of the Merger Agreement, HSAC2 and Legacy Orchestra entered into separate forward purchase agreements (each, as amended, a "Forward Purchase Agreement" and, together, the "Forward Purchase Agreements") with certain funds managed by RTW Investments, LP (the "RTW Funds") and Covidien Group S.à.r.l., an affiliate of Medtronic plc ("Medtronic" and the RTW Funds, each a "Purchasing Party"), pursuant to which each of the Purchasing Parties agreed to purchase $10 million of ordinary shares of HSAC2 ("HSAC2 Ordinary Shares") immediately prior to the Domestication (as defined below), less the dollar amount of HSAC2 Ordinary Shares holding redemption rights that the Purchasing Party acquired and held until immediately prior to the Domestication (such HSAC2 Ordinary Shares either purchased from HSAC2 or acquired and held until immediately prior to the Domestication, the "Forward Purchase Shares"). The RTW Funds completed their purchases of HSAC2 Ordinary Shares under their Forward Purchase Agreement on or before July 22, 2022. Medtronic completed approximately $9.9 million of purchases of HSAC2 Ordinary Shares under its Forward Purchase Agreement on or before January 20, 2023. Medtronic subsequently completed $0.1 million in purchases of HSAC2 Ordinary Shares and/or Company Common Stock on or before January 30, 2023.

Simultaneously with the execution of the Merger Agreement and Forward Purchase Agreements, HSAC2, Legacy Orchestra and the RTW Funds entered into a Backstop Agreement (the "Backstop Agreement"), pursuant to which the RTW Funds, jointly and severally, agreed to purchase such number of HSAC2 Ordinary Shares at a price of $10.00 per share to the extent that the amount of cash remaining in HSAC2's working capital and trust account as of immediately prior to the closing of the Merger was less than $60 million (which calculation excludes amounts received pursuant to Medtronic's Forward Purchase Agreement or are otherwise held in HSAC2's trust account established pursuant to the HSAC2 IPO (the "HSAC2 Trust Account") in respect of Medtronic's Forward Purchase Shares, but is inclusive of amounts received pursuant to the RTW Funds' Forward Purchase Agreement and otherwise held in the HSAC2 Trust Account in respect of the RTW Funds' Forward Purchase Shares). Pursuant to the Backstop Agreement, the RTW Funds purchased 1,808,512 HSAC2 Ordinary Shares on January 25, 2023, immediately prior to the Domestication.

Immediately prior to the closing of the Business Combination, each issued and outstanding share of Legacy Orchestra preferred stock (the "Legacy Orchestra Preferred Stock") was canceled and converted into shares of Legacy Orchestra common stock (the "Legacy Orchestra Common Stock") based on predetermined ratios (see Note 9).

Upon the consummation of the Business Combination, each issued and outstanding share of Legacy Orchestra Common Stock was canceled and converted into the right to receive shares of Company Common Stock based upon the Exchange Ratio. The shares and corresponding capital amounts and loss per share related to Legacy Orchestra Common Stock prior to the Business Combination have been retroactively restated to reflect the Exchange Ratio.

Outstanding stock options, whether vested or unvested, to purchase shares of Legacy Orchestra Common Stock ("Legacy Orchestra Options") granted under the Orchestra BioMed, Inc. 2018 Stock Incentive Plan ("2018 Plan") (see Note 11) converted into stock options for shares of Company Common Stock upon the same terms and conditions that were in effect with respect to such stock options immediately prior to the Business Combination, after giving effect to the Exchange Ratio (the "Exchanged Options").

The following table details the number of shares of Company Common Stock issued immediately following the consummation of the Business Combination:

	Number of Shares
Common stock of HSAC2, outstanding prior to the Business Combination	6,762,117
Less: Redemption of HSAC2 shares	(1,597,888)
Common stock held by former HSAC2 shareholders	5,164,229
HSAC2 sponsor shares	4,450,000
Shares issued related to Backstop Agreement	1,808,512
Total shares outstanding prior to issuance of merger consideration to Legacy Orchestra stockholders	11,422,741
Shares issued to Legacy Orchestra stockholders – Company Common Stock[(1)]	20,191,338
Total shares of Company Common Stock immediately after Business Combination[(2)]	31,614,079

(1) The number of shares of common stock issued to Legacy Orchestra equity holders was determined based on (i) 2,522,214 shares of Legacy Orchestra Common Stock outstanding immediately prior to the closing of the Business Combination converted based on the Exchange Ratio and (ii) 35,694,179 shares of Legacy Orchestra Preferred Stock outstanding immediately prior to the closing of the Business Combination converted based on the Exchange Ratio. All fractional shares were rounded down.
(2) Excludes 8,000,000 shares of Company Common Stock to be issued based on satisfaction of the Initial Milestone Event and the Final Milestone Event.

The following table reconciles the elements of the Business Combination to the Company's condensed consolidated statement of changes in stockholders' equity (deficit) (in thousands):

	Amount
Cash – HSAC2's trust (net of redemption)	$ 51,915
Cash – Backstop Agreement	18,085
Gross proceeds	70,000
Less: HSAC2 and Legacy Orchestra transaction costs paid	(15,698)
Effect of Business Combination, net of redemptions and transaction costs	$ 54,302

The $54.3 million above differs from the $56.8 million effect of the Business Combination on the condensed consolidated statements of cash flows, due to $2.5 million of transaction costs paid by Legacy Orchestra in 2022.

4. Terumo Agreement

In June 2019, Legacy Orchestra entered into the Terumo Agreement, pursuant to which Terumo secured global commercialization rights for Virtue SAB in coronary and peripheral vascular indications (the "Terumo Indications"). Under this agreement, Legacy Orchestra received an upfront payment of $30 million and an equity commitment of up to $5 million of which $2.5 million was invested in June 2019 as part of the Legacy Orchestra Series B-1 financing and $2.5 million was invested in June 2022 as part of the Legacy Orchestra Series D-2 financing. The Company was initially eligible to receive up to $65 million in additional payments based on the achievement of certain development and regulatory milestones and is also eligible to earn royalties on future sales by Terumo based on royalty rates ranging from 10 – 15%. As of the issuance date of these financial statements, the target achievement date for two $5 million milestone payments has already passed. In addition, due to delays in the Company's Virtue SAB program resulting from the COVID-19 pandemic, supply chain issues and unexpected changes to regulatory requirements, including increased testing and other activities related to chemistry, manufacturing, and control, increased nonclinical and good laboratory practice preclinical data requirements, including biocompatibility, as well as a requirement to repeat good laboratory practice preclinical studies already performed based on changes to source of component materials and a change in manufacturing site, the Company is unlikely to be able to complete the remaining time-based milestones by the specified target achievement dates to earn the remaining $25 million in time-based milestone payments pursuant to the Terumo Agreement. However, in June 2022, Legacy Orchestra and Terumo signed a letter agreement whereby the parties agreed to negotiate in good faith over 12 months mutually agreeable adjustments to certain target achievement dates to reflect the regulatory and pandemic-related delays. There is no assurance as to the outcome of these negotiations with respect to any potential modifications to the milestone target achievement dates. Pursuant to the terms of the Terumo Agreement, Legacy Orchestra licensed intellectual property rights to Terumo and the Company is primarily responsible for completing the development of the product in the United States through premarket approval by the FDA for the ISR indication. These research and development services to be provided by the Company include (i) manufacturing, testing and packaging the drug required for the clinical trials, (ii) supplying Terumo with information related to the design and manufacture of the delivery device and the technology transfer needed for Terumo to ultimately commence manufacture of the delivery device, and (iii) carrying out regulatory activities related to clinical trials in the United States for the ISR indication.

The Company has concluded that the license granted to Terumo is not distinct from the research and development services that will be provided to Terumo through the completion of the development of ISR indication, as Terumo cannot obtain the benefit of the license without the related research and development services. Accordingly, the Company will recognize revenues for this combined performance obligation over the estimated period of research and development services using a proportional performance model. The Company measures proportional performance based on the costs incurred relative to the total estimated costs of the research and development services.

In 2019, Legacy Orchestra received a total of $32.5 million from Terumo related to the stock purchase and the revenue generating elements of the Terumo Agreement. The Company recorded the estimated fair value of the shares of $2.5 million in stockholders' equity, as the value paid by Terumo is consistent with the value paid by other third-party stockholders in Legacy Orchestra's offering of its Series B-1 Preferred Stock. The Company allocated the remaining $30 million to the transaction price of the Terumo Agreement. The Company considers the future potential development and regulatory milestones to be variable consideration, which are fully constrained from the transaction price as of March 31, 2023 and December 31, 2022, as the achievement of such milestone payments are uncertain and highly susceptible to factors outside of the Company's control. The Company plans to re-evaluate the transaction price at each reporting period and as uncertain events are resolved or other changes in circumstances occur. In addition, the arrangement also includes sales-based royalties on product sales by Terumo subsequent to commercialization ranging from 10 - 15%, none of which have been recognized to date.

The Company recorded the $30 million upfront payment received from Terumo in 2019 within deferred revenue. The following table presents the changes in the Company's deferred revenue balance from the Terumo Agreement during the three months ended March 31, 2023 and 2022:

Deferred Revenue – December 31, 2022 (in thousands)	$	19,539
Revenue recognized		(1,019)
Deferred Revenue – March 31, 2023	$	18,520
Deferred Revenue – December 31, 2021	$	22,401
Revenue recognized		(716)
Deferred Revenue – March 31, 2022	$	21,685

The Company's balance of deferred revenue contains the transaction price from the Terumo Agreement allocated to the combined license and research and development performance obligation, which was partially unsatisfied as of March 31, 2023. The Company expects to recognize approximately $5.3 million of its deferred revenue during the next twelve months and recognize the remaining approximately $13.2 million through the remainder of the performance period, which is estimated through 2026.

As of each quarterly reporting date, the Company evaluates its estimates of the total costs expected to be incurred through the completion of the combined performance obligation and updates its estimates as necessary. For the three months ended March 31, 2023 and 2022, the expenses incurred related to the Terumo Agreement were approximately $3.8 million and $2.7 million, respectively. The estimated total costs associated with the Terumo Agreement through completion decreased by approximately 0.7% as of March 31, 2023, as compared to the estimates as of December 31, 2022, and increased by approximately 0.1% as of March 31, 2022, as compared to the estimates as of December 31, 2021. While the Company believes it has estimated total costs associated with the Terumo Agreement through completion, these estimates encompass a broad range of expenses over a multi-year period and, as such, are subject to periodic changes as new information becomes available. The impact of the changes in estimates resulted in an increase of partnership revenues of $81,000 and a reduction of $10,000 for the three months ended March 31, 2023 and 2022, respectively, as compared to the amounts that would have been recorded based on the previous estimates. The impact of these changes in estimates on the net loss per share attributable to common stockholders, basic and diluted, for the three months ended March 31, 2023 and 2022 is de minimis.

The Company will also manufacture, or have manufactured, SirolimusEFR and has exclusive rights to sell it on a per unit basis to Terumo for use in the Virtue SAB product. The Company has determined that this promise does not contain a material right as the pricing is based on standalone selling prices. Through December 31, 2022, there have been no additional amounts recognized as revenue under the Terumo Agreement other than the recognition of a portion of the upfront payment described above.

5. Medtronic Agreement

In June 2022, Legacy Orchestra, BackBeat Medical, LLC and Medtronic entered into the Medtronic Agreement for the development and commercialization of BackBeat CNT for the treatment of hypertension ("HTN") in patients indicated for a cardiac pacemaker (the "Primary Field"). Under the terms of the Medtronic Agreement, the Company will sponsor a multinational pivotal study to support regulatory approval of BackBeat CNT in the Primary Field and be financially responsible for development, clinical and regulatory costs associated with this pivotal study. Medtronic is currently working with the Company to integrate BackBeat CNT into its top-of-the-line, commercially available dual-chamber pacemaker system for use in the pivotal trial and will provide development, clinical and regulatory resources in support of the pivotal trial, for which the Company will reimburse Medtronic at cost.

Under the terms of the Medtronic Agreement, Medtronic will have exclusive rights to commercialize BackBeat CNT-enabled pacing systems globally following receipt of regulatory approval. Medtronic would be entirely responsible for global commercialization following receipt of regulatory approvals, including manufacturing, sales, marketing and distribution costs.

The Company is expected to receive between $500 and $1,600 per BackBeat CNT-enabled device sold based on a formula of the higher of (1) a fixed dollar amount per BackBeat CNT-enabled device (amount varies materially on a country-by-country basis) or (2) a percentage of the BackBeat CNT-generated sales. Procedures using the BackBeat CNT-enabled pacemakers are expected to be billed under existing reimbursement codes.

Medtronic has a right of first negotiation through FDA approval of BackBeat CNT in the Primary Field, to expand its global rights to BackBeat CNT for the treatment of HTN patients not indicated for a pacemaker.

The Company assessed whether the Medtronic Agreement fell within the scope of ASC 808 and concluded that the Medtronic Agreement is a collaboration within the scope of ASC 808. In addition, the Company determined that Medtronic is a customer for a good or service that is a distinct unit of account, and therefore, the transactions in the Medtronic Agreement should be accounted for under ASC 606.

The Company has concluded that the license granted to Medtronic is not distinct from the development and implementation services that will be provided to Medtronic through the completion of the development of HTN indication, as Medtronic cannot obtain the benefit of the license without the related development and implementation services. ASC 606-10-55-65 includes an exception for the recognition of revenue relating to licenses of intellectual property with sales-based or usage-based royalties. Under this exception, royalty revenue is not recorded until the subsequent sale or usage occurs, or the performance obligation has been satisfied, whichever is later.

The Company concluded that the exemption applies and therefore, the royalty revenue associated with these performance obligations will be recognized as the underlying sales occur. Additionally, pursuant to the Medtronic Agreement, expenses incurred by Medtronic in connection with clinical device development and regulatory activities performed will be reimbursed by the Company. The Company will record such expenses as research and development expenses as incurred. During the three months ended March 31, 2023, the Company incurred approximately $1.3 million of research and development costs related to these reimbursements to the Medtronic Agreement, all of which is included within accounts payable and accrued expenses in the Company's March 31, 2023 condensed consolidated balance sheet.

Concurrently with the close of the Medtronic Agreement, Legacy Orchestra also received a $40 million investment from Medtronic in connection with Legacy Orchestra's Series D-2 Preferred Stock financing. The equity was purchased at a fair value consistent with the price paid by other investors at that time, and accordingly, the proceeds received were recorded as an equity investment.

Through March 31, 2023, there have been no amounts recognized as revenue under the Medtronic Agreement.

6. Financial Instruments and Fair Value Measurements

The following tables summarize the Company's financial assets and liabilities measured at fair value on a recurring basis by level within the fair value hierarchy:

	March 31, 2023			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Money market fund (included in cash and cash equivalents)	$ 18,039	$ —	$ —	$ 18,039
Investment in Motus GI (see Note 7)	100	—	—	100
Marketable securities (Corporate and Government debt securities)	—	108,438	—	108,438
Total assets	$ 18,139	$ 108,438	$ —	$ 126,577

	December 31, 2022			
(in thousands)	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets				
Money market fund (included in cash and cash equivalents)	$ 8,708	$ —	$ —	$ 8,708
Investment in Motus GI (see Note 7)	86	—	—	86
Marketable securities (Corporate and Government debt securities)	—	63,915	—	63,915
Total assets	$ 8,794	$ 63,915	$ —	$ 72,709
Liabilities:				
Warrant liability (see Note 10)	$ —	$ —	$ 2,089	$ 2,089
Total liabilities	$ —	$ —	$ 2,089	$ 2,089

The Level 2 assets consist of government and corporate debt securities which are valued using market observable inputs, including the current interest rate and other characteristics for similar types of investments, whose fair value may not represent actual transactions of identical securities. There were no transfers between Levels 1, 2 or 3 for the periods presented.

Prior to the closing of the Business Combination, the Company's warrant liability was measured at fair value on a recurring basis using unobservable inputs and were classified as Level 3 inputs, and any change in fair value was recognized as change in fair value of warrant liability in the Company's condensed consolidated statements of operations and comprehensive loss. As of the Closing Date, all Legacy Orchestra liability classified warrants were reclassified to equity. Refer to Note 9 for the valuation technique and assumptions used in estimating the fair value of the warrants and discussion on the change in classification.

The following table presents a roll-forward of the aggregate fair values of the Company's liabilities for which fair value is determined by Level 3 inputs (in thousands):

	Warrant Liability
Balance—December 31, 2022	$ 2,089
Warrants exercised prior to the Business Combination	(10)
Change in fair value of warrants	294
Warrants reclassified to equity	(2,373)
Balance—March 31, 2023	$ —

7. Marketable Securities and Strategic Investments

Marketable Securities

The following is a summary of the Company's marketable securities as of March 31, 2023 and December 31, 2022:

	March 31, 2023			
(in thousands)	**Amortized Cost Basis**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Corporate debt securities	$ 18,598	$ 3	$ —	$ 18,601
Government debt securities	89,875	—	(38)	89,837
Total	$ 108,473	$ 3	$ (38)	$ 108,438

	December 31, 2022			
(in thousands)	**Amortized Cost Basis**	**Unrealized Gains**	**Unrealized Losses**	**Fair Value**
Corporate debt securities	$ 52,242	$ 7	$ —	$ 52,249
Government debt securities	11,681	—	(15)	11,666
Total	$ 63,923	$ 7	$ (15)	$ 63,915

The Company believes it is more likely than not that its marketable securities in an unrealized loss position will be held until maturity or the recovery of the cost basis of the investment. To date, the Company has not recorded any allowance for credit losses on its investment securities. The Company determined that the unrealized losses were not attributed to credit risk but were primarily driven by the broader change in interest rates.

For the three months ended March 31, 2023 and the year ended December 31, 2022, the Company did not recognize any realized gains or losses on its marketable securities.

Strategic Investments

The Company values the Motus GI investment by measuring fair value using the listed share price on the Nasdaq Capital Market on each valuation date.

Aggregate gains of $14,000 and losses of $220,000 during the three months ended March 31, 2023 and 2022, respectively, were recorded to adjust the strategic investments in equity securities of Motus GI to its fair value of $100,000 at March 31, 2023 and $86,000 at December 31, 2022, which is classified as strategic investments within current assets on the accompanying condensed consolidated balance sheets.

The Company's long term strategic investments as of March 31, 2023 represent investments made in Vivasure in 2020, 2021 and 2022 that were originally recorded at cost. There were no observable price changes or impairments identified during the three months ended March 31, 2023 or the three months ended March 31, 2022 related to these investments.

In May 2022, Vivasure announced a Series D private placement, in which it received a material investment from a new strategic investor. As a result, Legacy Orchestra's existing convertible redeemable notes converted into Series D Preferred Stock of Vivasure in May 2022. The investment in the Vivasure Series D Preferred Stock represents an observable price change in an orderly transaction for an identical instrument of the same issuer, and accordingly, the Company recognized a gain on its strategic investment in Vivasure of $1.9 million in the second quarter of 2022. This amount represents a portion of the previously impaired investment balance described below.

During the fourth quarter of 2019, the Company identified indicators of impairment of Vivasure strategic investments held at that time as a result of adverse changes in Vivasure's business operations, including liquidity concerns. As a result, the Company recorded an impairment charge in the fourth quarter of 2019 of $5.8 million, which represents the cumulative impairment charges recorded on Vivasure strategic investments to date.

8. Balance Sheet Components

Property and Equipment, Net

Property and equipment, net consists of the following:

(in thousands)	March 31, 2023	December 31, 2022
Equipment	$ 1,747	$ 1,712
Office furniture	364	364
Leasehold improvements	191	191
Property and equipment, gross	2,302	2,267
Less accumulated depreciation and amortization	(849)	(778)
Total Property and equipment, net	$ 1,453	$ 1,489

Depreciation and amortization expense was $71,000 and $48,000 for the three months ended March 31, 2023 and 2022, respectively.

Accrued Expenses

Accrued expenses consist of the following:

(in thousands)	March 31, 2023	December 31, 2022
Accrued compensation	$ 909	$ 2,480
Clinical trial accruals	966	1,003
Other accrued expenses	1,381	1,893
Total accrued expenses	$ 3,256	$ 5,376

9. Common and Preferred Stock

Common Stock

The Company is authorized to issue up to 340,000,000 shares of Company Common Stock, par value $0.0001 per share.

As discussed in Note 3, the Company has retroactively adjusted the shares issued and outstanding prior to January 26, 2023 to give effect to the Exchange Ratio to determine the number of shares of Company Common Stock into which they were converted.

Preferred Stock

The Company is authorized to issue 10,000,000 shares of preferred stock with a par value of $0.0001 per share. The board of directors of the Company (the "Board") has the authority to issue preferred stock and to determine the rights, privileges, preferences, restrictions, and voting rights of those shares. As of March 31, 2023, no shares of preferred stock were outstanding.

In January 2022, Legacy Orchestra initiated a Series D Preferred Stock financing comprised of Series D-1 and Series D-2 Preferred Stock. In March 2022, Legacy Orchestra closed the Series D-1 Preferred Stock financing over two closings, receiving gross proceeds of approximately $27.3 million. Each share of Series D-1 Preferred Stock was convertible into 1.1 shares of Legacy Orchestra Common Stock. In connection with the Series D-1 Preferred Stock financing, Legacy Orchestra incurred approximately $2.0 million in offering costs.

In June 2022, Legacy Orchestra closed the Series D-2 Preferred Stock financing, receiving gross proceeds of approximately $82.6 million, inclusive of a $40 million investment from Covidien Group S.à.r.l., an affiliate of Medtronic plc. In connection with the Series D-2 Preferred Stock financing, Legacy Orchestra incurred $6.2 million of offering costs.

Prior to the Business Combination, Legacy Orchestra had shares of $0.001 par value Series A, Series B, Series B-1, Series D-1 and Series D-2 preferred stock outstanding, all of which were convertible into shares of Legacy Orchestra Common Stock, subject to certain anti-dilution protections. Upon the Closing, the outstanding shares of Legacy Orchestra Preferred Stock were converted into Legacy Orchestra Common Stock in accordance with the terms of each class of Legacy Orchestra Preferred Stock (as described below), and then into Company Common Stock at the Exchange Ratio. The Series A and Series D-2 Preferred Stock converted into Legacy Orchestra Common Stock at a 1:1 ratio while the Series D-1 Preferred Stock converted at a 1:1.1 ratio. Except as noted below, the Series B Preferred Stock and the Series B-1 Preferred Stock (collectively, the “Series B/B-1 Preferred Stock”) converted into Legacy Orchestra Common Stock at a 1:1 ratio. However, the Series B/B-1 Preferred Stock had an innovative conversion feature. In the event of a follow-on offering of at least $8 million, excluding amounts invested attributable to holders exercising their preemptive rights, a holder of Series B/B-1 Preferred Stock was entitled to an adjustment to their conversion ratio to a 1:2 basis (i.e., one share of Series B Preferred Stock or Series B-1 Preferred Stock was convertible into two shares of common stock) if such investor invested at least 100% of its original investment in the initial offerings of Series B Preferred Stock or Series B-1 Preferred Stock in a specified follow-on offering (the “Conversion Rate Adjustment”).

10. Warrants

The Company evaluates its outstanding warrants to determine if the instruments qualify for equity or liability classification.

Private Warrants

Prior to the Merger, HSAC2 had outstanding 1,500,000 Private Warrants, which were issued in connection with the HSAC2 IPO to the Sponsor. Each Private Warrant entitles the holder thereof to purchase one share of Company Common Stock at a price of $11.50 per share, subject to adjustment as provided herein. The Private Warrants became exercisable 30 days after the completion of the Business Combination and will expire five years after the completion of the Business Combination. Each Private Warrant is non-redeemable and may be exercised on a cashless basis. Since these warrants are indexed to the Company’s publicly traded common stock, they are classified within equity.

As described in Note 3, the Sponsor and HSAC2's other initial shareholders prior to the HSAC2 IPO agreed to subject (i) the 4,000,000 Insider Shares and (ii) the 450,000 Private Shares to a lock-up for up to 12 months following the Closing and the Sponsor forfeited 50% of its 1,500,000 Private Warrants, comprising 750,000 Private Warrants, for no consideration, immediately prior to the Closing. Pursuant to the terms of the Merger Agreement, immediately following the Sponsor Forfeiture and prior to the Closing, HSAC2 issued 750,000 warrants to purchase Company Common Stock to eleven specified employees and directors of Legacy Orchestra. These new warrants have substantially similar terms to the forfeited Private Warrants, except that they will become exercisable between 24 and 36 months after the Closing.

Assumed Legacy Orchestra Warrants

Prior to the close of the Business Combination, the majority of Legacy Orchestra's warrants (the "Legacy Orchestra Warrants") were required to be accounted for as liabilities as certain features within the warrant agreements contained features that were not considered "fixed for fixed" pursuant to ASC 815, and therefore, the fair value of the warrant liability was marked-to-market at each balance sheet date, with the change in fair value recorded in the Company's condensed consolidated statements of operations and comprehensive loss within other income (expense). Upon the close of the Business Combination, all liability classified Legacy Orchestra Warrants became equity classified on that date, as the warrant agreements became "fixed for fixed." As a result, the warrant liability was fair valued and adjusted from $2.1 million as of December 31, 2022 to $2.4 million as of January 26, 2023, and then subsequently reclassified into stockholders' equity. In addition, Legacy Orchestra also had outstanding other equity classified warrants recorded within additional paid-in capital at the time of issuance at fair value that were not subject to subsequent remeasurement.

The Company calculates the fair value of the outstanding warrant liability at each reporting date by estimating the equity value of the Company, and then utilizing option pricing models to allocate the total equity value to the shares and warrants outstanding. The inputs used in the valuation models for the Company's warrant liability are as follows:

	Period from January 1, 2023 to January 26, 2023	Three months ended March 31, 2022
Expected volatility	44 – 49%	49 – 53%
Risk-free interest rate	3.60 – 4.80%	1.16 – 2.44%
Remaining term in years	0.35 – 5.00	1.17 – 7.69
Exercise price of common warrants	$1.08 – $30.11	$1.08 – $30.11
Exercise price of Legacy preferred warrants	—	$9.00 – $15.00
Common stock price	$ 10.63	$ 4.06
Legacy preferred stock price	—	$ 6.49 – $8.79
Expected dividend yield	0%	0%

The Company's warrant liability related to Legacy Orchestra warrant activity rollforward is as follows, with the warrants having been converted to reflect the effect of the Merger:

(in thousands, except share data)	Preferred Warrants	Common Warrants	Amount
Balance December 31, 2022	—	1,327,074	$ 2,089
Warrants exercised prior to the business combination	—	(1,163)	(10)
Change in fair value of warrants as of January 26, 2023	—	—	294
Warrants reclassified to equity	—	(1,325,911)	(2,373)
Balance March 31, 2023	—	—	$ —

(in thousands, except share data)	Preferred Warrants	Common Warrants	Amount
Balance December 31, 2021	206,997	1,189,162	$ 635
Exercise of warrants	—	(68,587)	(156)
Change in the fair value of warrants	—	—	145
Balance March 31, 2022	206,997	1,120,575	$ 624

Private Warrants and Assumed Legacy Orchestra Warrants

The following table summarizes outstanding warrants to purchase shares of Company Common Stock as of March 31, 2023 and December 31, 2022:

	Number of Shares			
	March 31, 2023	December 31, 2022	Exercise Price	Term
Liability-classified Warrants				
Legacy Orchestra Warrants	—	1,327,074	$ 0.50 – $14.00	0.35 – 5.00
	—	1,327,074		
Equity-classified Warrants				
Legacy Orchestra Warrants	1,425,936	250,000	$ 0.50 – $14.00	0.35 – 9.25
Private Warrants Held by Sponsor	750,000	1,500,000	$ 11.50	4.82 – 5.07
Private Warrants Held by Employees (Note 11)	750,000	—	$ 11.50	4.82
	2,925,936	1,750,000		
Total Outstanding	2,925,936	3,077,074		

11. Stock-Based Compensation

As of March 31, 2023, the only equity compensation plan from which the Company may currently issue new awards is the Company's 2023 Equity Incentive Plan (the "2023 Plan"), as more fully described below.

Orchestra BioMed, Inc. 2018 Stock Incentive Plan

Prior to the Merger, Legacy Orchestra maintained the 2018 Plan, under which Legacy Orchestra granted incentive stock options, non-qualified stock options and restricted stock awards to its employees and certain non-employees, including consultants, advisors and directors. The maximum aggregate shares of Legacy Orchestra Common Stock that was subject to awards and issuable under the 2018 Plan was 5.2 million shares prior to the Merger. Employees, consultants, and directors were eligible for awards granted under the 2018 Plan which generally have a contractual life of up to 10 years and may be exercisable in cash or as otherwise determined by the Board. Vesting generally occurs over a period of not greater than three years.

As described in Note 3, in connection with the Merger, each Legacy Orchestra Option that was outstanding and unexercised immediately prior to the time that the Merger became effective (the "Effective Time") (whether vested or unvested) was assumed by the Company and converted into an option to purchase an adjusted number of shares of Company Common Stock at an adjusted exercise price per share, based on the Exchange Ratio, and will continue to be governed by substantially the same terms and conditions, including vesting, as were applicable to the former option. Each Exchanged Option is exercisable for a number of whole shares of Company Common Stock equal to the product of the number of shares of Legacy Orchestra Common Stock underlying such Legacy Orchestra Options multiplied by the Exchange Ratio, and the per share exercise price of such Exchanged Option is equal to the quotient determined by dividing the exercise price per share of the Legacy Orchestra Option by the Exchange Ratio. Following the closing of the Merger, no new awards may be made under the 2018 Plan.

The Company accounted for the Exchanged Options as a modification of the existing options. Incremental compensation costs, measured as the excess, if any, of the fair value of the modified options over the fair value of the original options immediately before its terms are modified, is measured based on the fair value of the underlying shares and other pertinent factors at the modification date. The impact of the option modifications were de minimis.

Orchestra BioMed Holdings, Inc. 2023 Equity Incentive Plan

At the Effective Time, the Company adopted the 2023 Plan which permits the granting of incentive stock options, non-qualified options, stock appreciation rights, restricted stock, restricted stock units, performance awards and other stock-based award to employees, directors, and non-employee consultants and/or advisors. As of March 31, 2023, 3,455,303 shares of Company Common Stock are authorized for issuance pursuant to awards under the 2023 Plan. The pool of available shares will be automatically increased on the first day of each calendar year, beginning January 1, 2023 and ending January 1, 2032, by an amount equal to the lesser of (i) 4.8% of the outstanding shares of our Common Stock determined on a fully-diluted basis as of the immediately preceding December 31 and (ii) 3,036,722 shares of Common Stock, and (iii) such number of shares of Common Stock determined by the Board or the Compensation Committee prior to January 1st of a given year.

In addition, any awards outstanding under the 2018 Plan upon the Closing, after adjustment for the Business Combination, remain outstanding. If any of those awards subsequently expire, terminate, or are surrendered or forfeited for any reason without issuance of shares after the closing of the Business Combination, the shares of Company Common Stock underlying those awards will automatically become available for issuance under the 2023 Plan.

Total stock-based compensation related to option issuances was as follows:

	Three Months Ended March 31,	
(in thousands)	**2023**	**2022**
Research and development	$ 485	$ 39
Selling, general and administrative	738	16
Total stock-based compensation	$ 1,223	$ 55

As of March 31, 2023, there was approximately $7.4 million of unrecognized stock-based compensation expense associated with the stock options noted above that is expected to be recognized over a weighted average period of three years.

Total stock-based compensation related to restricted stock was as follows:

	Three Months Ended March 31,	
(in thousands)	**2023**	**2022**
Research and development	$ —	$ —
Selling, general and administrative	50	15
Total stock-based compensation	$ 50	$ 15

As of March 31, 2023, there was approximately $358,000 of unrecognized restricted stock-based compensation expense associated with the restricted stock noted above that is expected to be recognized over a weighted average period of approximately three years.

As previously discussed in Note 3 and Note 10, pursuant to the terms of the Merger Agreement, immediately following the Sponsor Forfeiture and prior to the Closing, the Company issued 750,000 warrants to purchase Company Common Stock to eleven specified employees and directors of Legacy Orchestra. These warrants have substantially similar terms to the forfeited Private Warrants, except that they will become exercisable between 24 and 36 months after the Business Combination. The estimated grant-date fair value of these warrant awards issued concurrent with the close of the Business Combination was calculated using the Black-Scholes option pricing model. Assumptions used were an expected term (in years) of 5.00, expected volatility of 50%, risk-free interest rate of 3.54%, expected dividend yield of 0%, and fair value of common stock of $10.63.

Total stock-based compensation related to warrants was as follows:

	Three Months Ended March 31,	
(in thousands)	**2023**	**2022**
Research and development	$ 86	$ —
Selling, general and administrative	130	—
Total stock-based compensation	$ 216	$ —

As of March 31, 2023, there was approximately $3.4 million of unrecognized stock-based compensation expense associated with the warrants noted above that is expected to be recognized over a weighted average period of approximately three years.

Stock Option Activity

The following table summarizes the stock option activity of the Company under the 2018 Plan and the 2023 Plan:

	Shares Underlying Options	**Weighted Average Exercise Price**	**Weighted Average Remaining Term (years)**	**Aggregate Intrinsic Value (in thousands)**
Outstanding at January 1, 2023	7,868,448	3.51	8.35	—
Retroactive application of Reverse Recapitalization (Note 3)	(4,209,620)	4.05		
Outstanding at January 1, 2023, effect of Merger	3,658,828	7.56	8.35	
Granted	323,175	9.89	—	—
Exercised	(2,325)	4.30	—	—
Forfeited/canceled	(35,043)	8.02	—	—
Outstanding March 31, 2023	3,944,635	7.76	5.38	$ 46,409
Exercisable at March 31, 2023	2,014,416	6.67	6.70	$ 24,964

The following table summarizes the restricted stock activity of the Company under the Plan:

	Restricted Stock Outstanding	**Weighted Average Remaining Term (years)**	**Aggregate Intrinsic Value (in thousands)**
Outstanding January 1, 2023	158,589	9.14	—
Granted	—	—	—
Vested	(40,078)	—	—
Forfeited/canceled	—	—	—
Outstanding March 31, 2023	118,511	8.90	$ 2,542

During the three months ended March 31, 2023, the Company did not grant any restricted stock awards (“RSAs”) while 40,078 RSAs vested at a weighted-average grant date fair value of $3.37.

Determination of Stock Option Awards Fair Value

The estimated grant-date fair value of all the Company's option awards was calculated using the Black-Scholes option pricing model, based on the following weighted average assumptions:

	Three Months Ended March 31,	
	2023	**2022**
Expected term (in years)	6.00	6.00
Expected volatility	50%	51%
Risk-free interest rate	3.60%	1.72%
Expected dividend yield	0%	0%
Fair value of common stock	$ 9.63	$ 4.06

The fair value of each stock option grant was determined by the Company using the methods and assumptions discussed below. Each of these inputs is subjective and generally requires significant judgment and estimation by management.

Expected Term — The expected term represents the period that stock-based awards are expected to be outstanding. The Company's historical share option exercise information is limited due to a lack of sufficient data points and did not provide a reasonable basis upon which to estimate an expected term. The expected term for option grants is therefore determined using the "simplified" method, as prescribed in the Securities and Exchange Commission's Staff Accounting Bulletin (SAB) No. 107. The simplified method deems the expected term to be the midpoint between the vesting date and the contractual life of the stock-based awards.

Expected Volatility — The expected volatility was derived from the historical stock volatilities of comparable peer public companies within the Company's industry that are considered to be comparable to the Company's business over a period equivalent to the expected term of the stock-based awards since there has been no trading history of the Legacy Orchestra Common Stock and limited trading history of the Company.

Risk-Free Interest Rate — The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the date of grant for zero-coupon U.S. Treasury notes with maturities approximately equal to the stock-based awards' expected term.

Expected Dividend Yield — The expected dividend yield is zero as neither the Company nor Legacy Orchestra has paid, and the Company does not anticipate paying, any dividends on its common stock in the foreseeable future.

Fair Value of Common Stock — Prior to the Business Combination, as the Legacy Orchestra Common Stock has not historically been publicly traded, its board of directors periodically estimated the fair value of the Company's common stock considering, among other things, contemporaneous valuations of its common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants 2013 Practice Aid, Valuation of Privately-Held-Company Equity Securities Issued as Compensation. Subsequent to the Business Combination, the Company utilizes the price of its publicly-traded Company Common Stock to determine the grant date fair value of awards.

12. Leases

Office Lease

In August 2019, Legacy Orchestra entered into an addendum to the original December 2009 lease agreement for 8,052 square feet of office space in New Hope, PA. The lease will expire in September 2024. Monthly fees will be between $9,000 and $19,000 for the period from commencement through termination.

In November 2019, Legacy Orchestra entered into a new lease agreement for approximately 5,200 square feet of office space in New York, NY. The lease will expire in March 2028. Monthly fees will be between $28,000 and $30,000 for the period from commencement through termination.

In January 2020, Legacy Orchestra entered into an agreement for the use of portions of the office space of Motus GI, a related party, in Fort Lauderdale, Florida. The agreement will expire in September 2024. The monthly fee commenced on the month following the date of agreement. Monthly fees will be between $12,000 and $17,000 for the period from commencement through termination.

In May 2022, Legacy Orchestra amended the agreement with Motus GI for a larger portion of the office space and extended the expiration date to November 2024. Monthly fees will be between $7,000 and $23,000 for the period from commencement of the amendment to expiration. The amount paid is estimated to be proportionate to the percentage of space used by the Company applied to the monthly rent obligated to be paid by Motus GI to their landlord.

Operating cash flow supplemental information for the three months ended March 31, 2023:

Cash paid for amounts included in the present value of operating lease liabilities was $205,000 during the three months ended March 31, 2023 compared to $185,000 during the three months ended March 31, 2022.

As of March 31, 2023:	
Weighted average remaining lease term – operating leases, in years	3.89
Weighted average discount rate – operating leases	6.25%

Operating Leases

Rent/lease expense for office and lab space was approximately $209,000 and $174,000 for the three months ended March 31, 2023 and 2022, respectively. The table below shows the future minimum rental payments, exclusive of taxes, insurance, and other costs, under the leases as of March 31, 2023:

Year ending December 31:	**Operating Leases (in thousands)**
2023 (remaining nine months)	$ 618
2024	727
2025	352
2026	352
2027	352
Thereafter	88
Total future minimum lease payments	$ 2,489
Imputed interest	(278)
Total liability	$ 2,211

13. Related Party Transactions

In addition to transactions and balances related to cash and stock-based compensation to officers and directors, the Company had the following transactions and balances with related parties during the year ended 2022 and the three months ended March 31, 2023:

Vivasure Investments

In December 2020 and 2021, and April 2022, Legacy Orchestra invested in Vivasure, a related party, $183,000, $213,000, and $208,000, respectively, in the form of unsecured convertible redeemable notes. The unsecured convertible redeemable notes converted into Series D preferred stock of Vivasure in May of 2022 (Note 7).

14. Debt Financing

In June 2022, Legacy Orchestra entered into a Loan and Security Agreement with Avenue Venture Opportunities Fund I and II (the "2022 Loan and Security Agreement"). The terms of the 2022 Loan and Security Agreement include a term loan of up to $20 million available in two tranches with the first tranche of $10 million that was drawn at closing in June of 2022, and a second tranche of $10 million available at closing of the Legacy Orchestra Series D-2 Preferred Stock financing that has not yet been drawn. Additionally, the Company may have access to a third tranche of $30 million subject to certain financing milestones. The term loan matures on June 1, 2026. In addition, the lender has the right, at its discretion, but not the obligation, to convert any portion of the outstanding principal amount of the loans up to $5 million into shares of Company Common Stock at a price per share equal to $12.00 (the "Conversion Option"), subject to adjustment; provided, however, the Conversion Option shall not be exercised by lender during the six (6) month period after completion of the Business Combination.

Pursuant to the terms of the 2022 Loan and Security Agreement, Legacy Orchestra issued Avenue Venture Opportunities Fund I and II warrants that will be exercisable for 100,000 shares of Company Common Stock, and the estimated fair value of the warrants of $178,000 was recorded as debt discount on the date of issuance and is being amortized to interest expense over the term of the 2022 Loan and Security Agreement. In addition, other financing costs totaling $405,000 were also recorded as debt discount and is being amortized to interest expense over the term of the facility.

The term loan accrues interest at a floating per annum rate equal to the Wall Street Journal prime rate plus 6.45%. The rate in effect at March 31, 2023 was 14.45%. The repayment terms of the loan include monthly payments over a 4-year period, consisting of an initial 2-year interest-only period, followed by 24 monthly principal payments of $417,000 plus interest. In addition, there is a final payment equal to 4.25% of the initial commitment amount of $20 million, which will be accrued over the term of the loan using the effective-interest method.

Concurrent with the closing of the 2022 Loan and Security Agreement, Legacy Orchestra terminated and repaid an existing 2019 Loan and Security Agreement with Silicon Valley Bank (the "2019 Loan and Security Agreement"), which resulted in a loss on extinguishment of $682,000. Pursuant to the terms of the 2019 Loan and Security Agreement, Legacy Orchestra issued Silicon Valley Bank a warrant that, to the extent Legacy Orchestra made draws on the 2019 Loan and Security Agreement, was exercisable for a number of shares of Legacy Orchestra Common Stock equal to 2% of the amount drawn divided by the exercise price of $1.33 per share of Legacy Orchestra Common Stock. As a result of the draw in December of 2020, Legacy Orchestra issued 150,000 Legacy Orchestra Common Stock warrants to Silicon Valley Bank, and the estimated fair value of the warrants of $544,000 was recorded as debt discount on the date of issuance and was being amortized to interest expense over the term of the credit facility.

The term loan accrued interest at a floating per annum rate equal to the greater of (i) the Wall Street Journal prime rate plus 1.00% or (ii) 6.25%. In addition, there was a final payment equal to 8.25% of the original aggregate principal amount which accrued over the term of the loan using the effective-interest method.

Total interest expense recorded on these facilities during the three months ended March 31, 2023 and March 31, 2022 was approximately $351,000 and $236,000, respectively.

The following table shows the amount of principal payments due pursuant to the term loan by year:

Period ending March 31:	Principal Payments (in thousands)
2023 (remaining 9 months)	$ —
2024	2,500
2025	5,000
2026	2,500
Total	$ 10,000

The term loan is secured by all of the Company's assets, excluding intellectual property and certain other assets. The loan contains customary affirmative and restrictive covenants, including the Company's ability to enter into fundamental transactions, incur additional indebtedness, grant liens, pay any dividend or make any distributions to its holders, make investments, merge or consolidate with any other person or engage in transactions with the Company's affiliates, but does not include any financial covenants.

15. Net Loss Per Share

Basic net loss per share of Company Common Stock is computed by dividing net loss by the weighted-average number of shares of Company Common Stock. Shares of Company Common Stock outstanding but subject to forfeiture and cancellation by the Company (e.g., the Forfeitable Shares – see Note 3) are excluded from the weighted-average number of shares until the period in which such shares are no longer subject to forfeiture.

Diluted net loss per share of Company Common Stock includes the effect, if any, from the potential exercise or conversion of securities, such as stock options, Legacy Orchestra Warrants and Private Warrants, and Forfeitable Shares and Earnout Consideration, which would result in the issuance of incremental shares of Company Common Stock, unless their effect would be anti-dilutive.

The following outstanding potentially dilutive securities have been excluded from the calculation of diluted net loss per share for the three months ended March 31, 2023 and March 31, 2022, as their effect is anti-dilutive:

	Three Months Ended March 31,	
	2023	**2022**
Stock options	3,944,635	1,342,768
Company Common Stock warrants	2,925,936	1,565,730
Unvested Restricted Stock Awards	118,511	131,511
Conversion Option	416,667	—
Forfeitable Shares	1,000,000	—
Earnout Consideration	8,000,000	—
Total	16,405,749	3,040,009

16. Subsequent Events

The Company has evaluated subsequent events through May 12, 2023, the date on which these condensed consolidated financial statements were issued.

As discussed in Note 3, in connection with the Business Combination, existing Legacy Orchestra stockholders had the opportunity to elect to participate in the Earnout pursuant to which each such Earnout Participant may receive a portion of additional contingent consideration of up to 8,000,000 shares of Earnout Consideration. On April 12, 2023, the Initial Milestone Event was achieved, and each Earnout Participant was issued their Pro Rata Portion (as such term is defined in the Merger Agreement) of 4,000,000 shares of Company Common Stock. Additionally, 500,000 of the Forfeitable Shares are no longer subject to forfeiture as a result of the Initial Milestone Event.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Unless otherwise indicated or the context otherwise requires, references to "Orchestra," "Orchestra's, "the Company," "we," "its," and "our" refer to Orchestra BioMed Holdings, Inc. and its consolidated subsidiaries. All references to years, unless otherwise noted, refer to the Company's fiscal years, which end on December 31.

The following discussion should be read together with "Special Note Regarding Forward-Looking Statements" and the Company's unaudited condensed consolidated financial statements, together with the related notes thereto, included elsewhere in this Quarterly Report on Form 10-Q (the "Consolidated Financial Statements"), and the Company's audited consolidated financial statements, together with the related notes thereto, included as Exhibit 99.1 to the Company's Current Report on Form 8-K/A filed with the Securities and Exchange Commission on March 24, 2023.

Closing of Business Combination

Prior to January 26, 2023, the Company was a special purpose acquisition company formed for the purpose of entering into a merger, amalgamation, share exchange, asset acquisition, share purchase, reorganization or similar business combination with one or more businesses or entities. On January 26, 2023, we consummated the business combination contemplated by the Agreement and Plan of Merger, dated as of July 4, 2022 (as amended by Amendment No. 1 to Agreement and Plan of Merger, dated July 21, 2022, and Amendment No. 2 to Agreement and Plan of Merger, dated November 21, 2022, the "Merger Agreement") by and among Health Sciences Acquisitions Corporation 2, a special purpose acquisition company incorporated as a Cayman Islands exempted company in 2020 and Orchestra's predecessor ("HSAC2"), HSAC Olympus Merger Sub, Inc., a Delaware corporation and wholly owned subsidiary of HSAC2 ("Merger Sub"), and Orchestra BioMed, Inc. ("Legacy Orchestra"). Pursuant to the Merger Agreement, (i) HSAC2 deregistered in the Cayman Islands in accordance with the Companies Act (2022 Revision) (As Revised) of the Cayman Islands and domesticated as a Delaware corporation in accordance with Section 388 of the Delaware General Corporation Law (the "Domestication") and (ii) Merger Sub merged with and into Legacy Orchestra, with Legacy Orchestra as the surviving company in the merger and, after giving effect to such merger, continuing as a wholly owned subsidiary of Orchestra (the "Merger" and, together with the Domestication and the other transactions contemplated by the Merger Agreement, the "Business Combination"). As part of the Domestication, we changed our name from "Health Sciences Acquisitions Corporation 2" to "Orchestra BioMed Holdings, Inc." On January 27, 2023, our common stock ("Company Common Stock") began trading on The Nasdaq Global Market under the symbol "OBIO." For additional information, see Note 3 to the Consolidated Financial Statements.

Reverse Recapitalization

The Business Combination is accounted for as a reverse recapitalization (the "Reverse Recapitalization") in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP"). Under this method of accounting, HSAC2 is treated as the "acquired" company and Legacy Orchestra is treated as the acquirer for financial reporting purposes. As a result, the consolidated assets, liabilities and results of operations prior to the Reverse Recapitalization are those of Legacy Orchestra. Additionally, the shares and corresponding capital amounts and losses per share, prior to the Business Combination, have been retroactively restated based on shares reflecting the exchange ratio established in the Merger Agreement (the "Exchange Ratio"). For additional information on the Business Combination and the Exchange Ratio, see Note 3 to the Consolidated Financial Statements.

Overview

We are a biomedical innovation company accelerating high-impact solutions for large unmet needs in procedure-based medicine through risk-reward sharing partnerships with leading medical device companies. Our partnership-enabled business model focuses on forging strategic collaborations with leading medical device companies to drive successful global commercialization of products we develop. We are led by a highly accomplished, multidisciplinary management team and a board of directors with extensive experience in all phases of therapeutic device development. Our business was formed in 2018 by assembling a pipeline of multiple late-stage clinical product candidates originally developed by our founding team. Our flagship product candidates are BackBeat Cardiac Neuromodulation Therapy ("BackBeat CNT") for the treatment of hypertension ("HTN"), a significant risk factor for death worldwide, and Virtue Sirolimus AngioInfusion Balloon ("Virtue SAB") for the treatment of atherosclerotic artery disease, the leading cause of mortality worldwide.

Since Legacy Orchestra's inception, we have devoted the substantial majority of our resources to performing research and development and clinical activities in support of our product development and collaboration efforts. We have funded our operations primarily through the issuance of convertible preferred stock and proceeds from the Business Combination, as well as through proceeds from our distribution agreement (the "Terumo Agreement") with Terumo Medical Corporation ("Terumo"), borrowings under debt arrangements and, to a lesser extent, from product revenue from our subsidiary, FreeHold Surgical, Inc. ("FreeHold"). We have raised a cumulative $166.8 million in gross proceeds through the issuance of convertible preferred stock, $70.0 million in gross proceeds from the Business Combination, and have received $30.0 million from the Terumo Agreement through March 31, 2023. We have incurred net losses each year since inception. Our net losses were $10.9 million and $5.7 million for the three months ended March 31, 2023 and 2022, respectively. We expect to continue to incur significant losses for the foreseeable future. As of March 31, 2023, we had an accumulated deficit of $210.7 million.

Legacy Orchestra, our wholly owned subsidiary, was incorporated in Delaware in 2017 and completed a recapitalization and mergers with Caliber Therapeutics, Inc., a Delaware corporation that has, among other things, the rights to the Virtue SAB product candidate and BackBeat Medical, Inc., a Delaware Corporation that has, among other things, the rights to the Backbeat CNT product candidate, in 2018. Legacy Orchestra completed the conversions of Caliber Therapeutics, Inc. to Caliber Therapeutics, LLC, a Delaware limited liability company, and BackBeat Medical, Inc. to BackBeat Medical, LLC, a Delaware limited liability company, in 2019.

COVID-19 Impact and Business Update

Outbreaks of contagious disease, including COVID-19, or other adverse public health developments in the United States or worldwide could have a material adverse effect on our business, including our clinical trials and financial condition. While many of the direct impacts of the COVID-19 pandemic have eased, the longer-term macroeconomic effects on global supply chains, inflation, labor shortages and wage increases continue to impact many industries, including ours. Moreover, with the potential for new strains of existing viruses to emerge, or other pandemics or epidemics, governments and businesses may re-impose aggressive measures to help slow its spread in the future. Long-term macroeconomic effects from a pandemic or epidemic, including from supply and labor shortages and workforce reductions in response to challenging economic conditions, may have an adverse impact on our business. In addition, COVID-19 caused, and any future pandemic or epidemic may cause, delays with respect to regulatory approvals or certifications for clinical studies, the initiation of clinical studies and the coordination of follow-up with respect to clinical studies, as well as delays in receiving supplies and third-party testing results from vendors.

As the COVID-19 pandemic developed, we took numerous steps to help ensure the health and safety of our employees. We continue to actively monitor the impact of the COVID-19 pandemic on our development programs. To date, we experienced some impacts on our development programs due to the pandemic, including delays in receiving products and services from certain of our manufacturing and other key vendors as a direct or indirect result of the COVID-19 pandemic, including supply chain issues, and competition for manufacturing capacity from manufacturers of COVID-19 related therapeutics. We also experienced challenges related to recruiting, enrolling and treating patients in clinical studies due to patients' concern regarding exposure risk; patients and clinical study staff being exposed to the virus that causes COVID-19 or contracting COVID-19; reduced staffing at clinical study sites due to the diversion of resources at clinical sites to address the effects of the pandemic; and travel restrictions and shutdowns impacting patients and clinical study staff. While many of these impacts have been resolved, we continue to monitor our clinical development and supply chain and contingency planning is ongoing with our partners to reduce the possibility and magnitude of interruptions to our development activities or the availability of necessary materials.

The full extent of the impact and effects of COVID-19, and any future pandemics or epidemics, will depend on future developments, including, among other factors, how rapidly variants develop, availability, acceptance and effectiveness of vaccines along with related travel advisories, quarantines and restrictions, the recovery time of the disrupted supply chains and industries, the impact of labor market interruptions, the impact of government interventions, and uncertainty with respect to the duration of the global economic slowdown. We continue to actively monitor the situation related to COVID-19 and any future pandemics or epidemics and may take further actions that alter our operations, including those that federal, state or local authorities may require, or that we determine are in the best interests of our clinical study subjects, employees and other third parties with whom we do business. While many of the direct impacts of the COVID-19 pandemic have eased, the extent to which the COVID-19 pandemic may affect our future business, operations and development timelines and plans, including the resulting impact on our expenditures and capital needs, remains uncertain.

Components of Our Results of Operations

Partnership Revenue

To date, our partnership revenues have related to the Terumo Agreement described below. In future periods, partnership revenues may also include revenues related to the Exclusive License and Collaboration Agreement, dated as of June 30, 2022, by and among, Legacy Orchestra, BackBeat Medical, LLC and Medtronic, Inc. (an affiliate of Medtronic plc) (the "Medtronic Agreement"), discussed in Note 5, *Medtronic Agreement*, to the Consolidated Financial Statements.

Legacy Orchestra entered into the Terumo Agreement in June 2019, and has determined that the arrangement represents a contract with a customer and is therefore in scope of ASC 606, *Revenues from Contracts with Customers* ("ASC 606"). Under the Terumo Agreement, Legacy Orchestra received an upfront payment of $30.0 million in 2019 and an equity commitment of up to $5 million of which $2.5 million was invested in June 2019 as part of the Legacy Orchestra Series B-1 financing and $2.5 million was invested in June 2022 as part of the Legacy Orchestra Series D-2 financing.

Under the Terumo Agreement, we were initially eligible for certain milestone payments in the amount of $65 million from Terumo upon completion of certain minimum enrollments in clinical studies, making certain filings and submissions, and obtaining certain regulatory approvals and certifications, and are also eligible to earn royalties on future sales by Terumo based on royalty rates ranging from 10 - 15%. Of these milestone payments, $35 million relate to achieving certain milestones by specified target achievement dates. As of the date of this filing, we have already passed the target achievement dates for two $5 million milestone payments, in each case, without achieving the related milestones. In addition, due to delays in our Virtue SAB program resulting from the COVID-19 pandemic, supply chain issues and unexpected regulatory delays and requirements, including increased testing and other activities related to chemistry, manufacturing, and control, increased nonclinical and good laboratory practice preclinical data requirements, including biocompatibility, as well as a requirement to repeat good laboratory practice preclinical studies already performed based on changes to source of component materials and a change in manufacturing site, that caused us to amend our original project plan, we are unlikely to be able to complete the remaining time-based milestones by the specified target achievement dates to earn the remaining $25 million in time-based milestone payments pursuant to the Terumo Agreement. Further, Terumo has the right to terminate the agreement, or certain of its obligations thereunder, if certain milestones are not achieved. However, in June 2022, Legacy Orchestra and Terumo signed a letter agreement whereby the parties agreed to negotiate in good faith over 12 months mutually agreeable adjustments to certain target achievement dates to reflect the regulatory and pandemic-related delays. There is no assurance as to the outcome of these negotiations with respect to any potential modifications to the milestone target achievement dates. In addition, we will manufacture, or have manufactured, SirolimusEFR and have exclusive rights to sell it on a per unit basis to Terumo for use in the Virtue SAB product, and Terumo may also request other services from us from time to time.

We recorded the $30.0 million upfront payment received in 2019 from Terumo within deferred revenue and are recognizing the upfront payment over time based on a proportional performance model based on the costs incurred to date relative to the total costs expected to be incurred through the completion of the development of the Coronary in-stent restenosis ("ISR") indication, for which we are primarily responsible. We have recognized $11.5 million in cumulative partnership revenues from 2019 through March 31, 2023. There were no other proceeds received pursuant to the Terumo Agreement from 2019 through March 31, 2023.

In June 2022, Legacy Orchestra entered into the Medtronic Agreement for the development and commercialization of BackBeat CNT for the treatment of HTN in patients indicated for a cardiac pacemaker. We have determined that the arrangement is a collaboration within the scope of *ASC 808, Collaborative Arrangements* ("ASC 808"). In addition, we concluded that Medtronic, Inc., an affiliate of Medtronic plc ("Medtronic"), is a customer for a good or service that is a distinct unit of account, and therefore, the transactions in the Medtronic Agreement should be accounted for under ASC 606. Through March 31, 2023, there have been no amounts recognized as revenue under the Medtronic Agreement.

Product Revenue

Product revenues related to sales of FreeHold's intracorporeal organ retractors and such revenues are recognized at a point-in-time upon the shipment of the product to the customer given payment terms are typically 30 days. FreeHold products are currently only sold in the United States.

Cost of Product Revenue and Gross Margin

Cost of product revenue consists primarily of costs of finished goods components for use in FreeHold's products and assembled, warehoused and inventoried by a third-party vendor. We expect cost of finished goods product revenue to increase in absolute terms as our revenue grows.

Our gross margin has been and will continue to be affected by a variety of factors, including finished goods manufactured component parts and the cost to assemble and warehouse the FreeHold product finished goods inventory.

Research and Development Expenses

Research and development expenses consist of applicable personnel, consulting, materials and clinical study expenses. Research and development expenses include:

- Certain personnel-related expenses, including salaries, benefits, bonus, travel and stock-based compensation;
- Cost of clinical studies to support new products and product enhancements, including expenses for clinical research organizations and site payments;
- Product device materials and drug supply and manufacturing used for internal research and development and clinical activities;
- Allocated overhead including facilities and information technology expenses; and
- Cost of outside consultants who assist with device and drug development, regulatory affairs, clinical affairs and quality assurance.

Research and development costs are expensed as incurred. Research and development activities are central to our business model. Product candidates in later stages of clinical development generally have higher development costs than those in earlier stages of clinical development, primarily due to the increased size and duration of later-stage clinical studies. In the future, we expect research and development expenses to increase in absolute dollars as we continue to develop new products, enhance existing products and technologies, initiate clinical studies, manufacture drug supply for internal research and development and clinical trial supply and perform activities related to obtaining additional regulatory approvals. We do not track expenses by product candidate, unless tracking such expenses is required pursuant to the revenue recognition model for a collaborative arrangement.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist of personnel-related expenses, including salaries, benefits, bonus, travel and stock-based compensation. Other selling, general and administrative expenses include professional services fees, including legal, audit investor/press relations, non-income taxes, insurance costs, cost of outside consultants and employee recruiting and training costs. Moreover, we incur and expect to continue to incur additional expenses associated with operating as a public company, including legal, accounting, insurance, exchange listing and U.S. Securities and Exchange Commission ("SEC") compliance and investor relations. We expect quarterly selling, general and administrative expenses, excluding stock compensation expense, to continue to increase as a public company.

Interest Income (Expense), Net

Interest income reflects the income generated from marketable securities during the year. Interest expense is attributable to loan interest.

In June 2022, Legacy Orchestra entered into a Loan and Security Agreement with Avenue Venture Opportunities Fund I and II (the "2022 Loan and Security Agreement"). As part of the 2022 Loan and Security Agreement, Legacy Orchestra paid off the balance of the 2019 Loan and Security Agreement (as defined below) with Silicon Valley Bank. The terms of the 2022 Loan and Security Agreement include a term loan of up to $20 million available in two tranches with the first tranche of $10 million that was drawn at closing in June of 2022, and a second tranche of $10 million available at closing of the Series D-2 that has not yet been drawn. Additionally, we may have access to a third tranche of $30 million subject to certain financing milestones. The term loan matures on June 1, 2026 and accrues interest at a floating per annum rate equal to the Wall Street Journal prime rate plus 6.45%. The rate in effect at March 31, 2023 was 14.45%. Refer to Note 14 to the Consolidated Financial Statements.

In December 2019, Legacy Orchestra entered into a Loan and Security Agreement with Silicon Valley Bank for a term loan as described in Note 14 to the Consolidated Financial Statements (the "2019 Loan and Security Agreement"). The 2019 Loan and Security Agreement provided Legacy Orchestra with capital for development and general corporate purposes. On December 31, 2020, Legacy Orchestra borrowed $10 million under the 2019 Loan and Security Agreement.

Gain (Loss) on Fair Value Adjustment of Warrant Liability

Certain of Legacy Orchestra's outstanding warrants contained features that required the warrants to be accounted for as liabilities. The warrants were subject to re-measurement at each balance sheet date with gains and losses reported through Legacy Orchestra's condensed consolidated statements of operations and comprehensive loss as gain (loss) on fair value adjustment of warrant liability. Upon closing of the Business Combination, all liability classified warrants of Legacy Orchestra became equity classified on that date as they are now considered "fixed for fixed."

Gain (Loss) on Fair Value of Strategic Investments

The gain (loss) on fair value of strategic investments represents a change in the fair value of our investment in Motus GI Holdings, Inc. ("Motus GI"), a publicly-held company and related party, and preferred shares and convertible notes of Vivasure Medical Limited ("Vivasure"), a privately-held company and related party. The shares held of Motus GI represent equity securities with a readily determinable fair value and are required to be measured at fair value at each reporting period using readily determinable pricing available on a securities exchange, in accordance with the provisions of ASU 2016-01, *Recognition and Measurement of Financial Assets and Liabilities*. The investments in Vivasure do not have readily determinable fair values and are recorded at cost, less any impairment, plus or minus changes resulting from observable price changes in orderly transactions for identical or similar investments of the same issuer.

Results of Operations

Comparison of the Three Months Ended March 31, 2023 and 2022

The following table presents our statement of operations data for the three months ended March 31, 2023 and 2022, and the dollar and percentage change between the two periods (in thousands):

	Three Months Ended March 31,			
	2023	2022	Change $	Change %
	(Unaudited)			
Revenue:				
Partnership revenue	$ 1,019	$ 716	$ 303	42%
Product revenue	145	150	(5)	(3)%
Total revenue	1,164	866	298	34%
Expenses:				
Cost of product revenue	44	42	2	5%
Research and development	8,254	3,474	4,780	138%
Selling, general and administrative	4,411	2,478	1,933	78%
Total expenses	12,709	5,994	6,715	112%
Loss from operations	(11,545)	(5,128)	(6,417)	(125)%
Interest income (expense), net	885	(236)	1,121	475%
Loss on fair value of warrant liability	(294)	(145)	(149)	(103)%
Gain (loss) in fair value of strategic investments	14	(220)	234	106%
Total other income (expense)	605	(601)	1,206	201%
Net loss	$ (10,940)	$ (5,729)	$ (5,211)	(91)%

Partnership Revenue

Partnership revenue increased by $303,000, or approximately 42%, to $1.0 million in the three months ended March 31, 2023 from $716,000 for the three months ended March 31, 2022. Partnership revenue relates to the recognition of the combined performance obligation for the license granted to Terumo and the ongoing research and development services over the estimated performance period for the Virtue SAB Coronary ISR indication, using a proportional performance model, based on the costs incurred relative to the total estimated costs of the research and development services. As of each quarterly reporting date, we evaluate our estimates of the total costs expected to be incurred through the completion of the combined performance obligation and update our estimates as necessary.

For the three months ended March 31, 2023 and 2022, the expenses incurred related to the Terumo Agreement were approximately $3.8 million and $2.7 million, respectively. The estimated total costs associated with the Terumo Agreement through completion decreased by approximately 0.7% as of March 31, 2023 as compared to the estimates as of December 31, 2022, and increased by approximately 0.1% as of March 31, 2022, as compared to the estimates as of December 31, 2021.

While we believe we have estimated total costs associated with the Terumo Agreement through completion, these estimates encompass a broad range of expenses over a multi-year period and, as such, are subject to periodic changes as new information becomes available.

Product Revenue

Product revenue decreased by $5,000, or approximately 3%, to $145,000 in the three months ended March 31, 2023 from $150,000 for the three months ended March 31, 2022.

Product revenue consisted of the sale of FreeHold Duo and Trio intracorporeal organ retractors and revenue is recognized when product is shipped to customers. The decrease in product revenue was primarily due to a decrease in the purchase volume of FreeHold Duo and Trio intracorporeal organ retractors. There were no changes to the per unit sale price in either period presented.

Cost of Product Revenue

Cost of product revenue increased by $2,000, or approximately 5%, to $44,000 in the three months ended March 31, 2023 from $42,000 for the three months ended March 31, 2022. The increase was primarily due to increased production costs of FreeHold Duo and Trio intracorporeal organ retractors.

Research and Development Expenses

The following table summarizes our research and development expenses for the three months ended March 31, 2023 and 2022 (in thousands):

	Three Months Ended March 31,	
	2023	2022
Personnel and consulting costs	$ 4,220	$ 1,895
Non-clinical development costs	2,730	1,152
Clinical development costs	1,304	427
Total research and development expenses	$ 8,254	$ 3,474

Research and development expenses increased by $4.8 million, or approximately 138%, to $8.3 million for the three months ended March 31, 2023, from $3.5 million for the three months ended March 31, 2022. This is primarily due to an increase in support of ongoing work to advance BackBeat CNT and Virtue SAB into planned pivotal studies during 2023 and included an increase in personnel related expenses of $1.8 million due to increased headcount and associated expenses, along with increased stock-based compensation of $532,000, an increase of $1.6 million in research and development program costs, supplies, and testing, and an increase of $877,000 in clinical development costs.

The total research and development expenses summarized above include $3.8 million for the three months ended March 31, 2023 and $2.7 million for the three months ended March 31, 2022 related to the Terumo Agreement. The increase of $1.1 million is due to increased expense activity related to the Terumo Agreement during the 2023 period.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased by $1.9 million, or approximately 78%, to $4.4 million for the three months ended March 31, 2023, from $2.5 million of expense for the three months ended March 31, 2022. The increase was primarily due to an increase in headcount which resulted in a $141,000 increase in salary and medical benefit costs, along with increased stock-based compensation of $886,000, and an increase of $594,000 of accounting, finance, legal expenses, investor relations and public relations expenses incurred in connection with the overall growth of the business and in preparation for becoming and being a public company.

Interest Income (Expense), Net

Interest income (expense), net, increased by $1.1 million, or approximately 475%, to $885,000 of income for the three months ended March 31, 2023, from $236,000 of expense for the three months ended March 31, 2022. The net interest income in the 2023 period consisted primarily of interest earned from marketable securities offset by monthly interest expense incurred resulting from the 2022 Loan and Security Agreement. The net interest expense in the 2022 period consisted primarily of interest expense incurred resulting from the December 31, 2020 drawdown of the $10.0 million tranche from the 2019 Loan and Security Agreement.

Loss on Fair Value Adjustment of Warrant Liability

The loss on fair value adjustment of warrant liability was a loss of $294,000 for the three months ended March 31, 2023, as compared to a loss of $145,000 for the three months ended March 31, 2022. The change year over year is primarily a result of the change in the fair value of our outstanding warrants due to an increase in the fair value of the underlying common stock.

Gain (Loss) on Fair Value of Strategic Investments

The gain in fair value of strategic investments was $14,000 for the three months ended March 31, 2023, as compared to a loss of $220,000 for the three months ended March 31, 2022. The amounts recognized for the three months ended March 31, 2023 and the three months ended March 31, 2022 related to the change in fair value in our common stock holdings of Motus GI.

Liquidity and Capital Resources

From inception through March 31, 2023, we have incurred significant operating losses and negative cash flows from its operations. Our net losses were $10.9 million and $5.7 million for the three months ended March 31, 2023 and March 31, 2022, respectively. As of March 31, 2023, we had an accumulated deficit of $210.7 million. We have funded our operations primarily through the issuance of convertible preferred stock and proceeds from the Business Combination, as well as through proceeds from the Terumo Agreement, borrowings under debt arrangements and, to a lesser extent, from FreeHold product revenue. We have raised a cumulative $166.8 million in gross proceeds through the issuance of convertible preferred stock, $70.0 million in gross proceeds from the Business Combination, and have received $30.0 million from the Terumo Agreement through March 31, 2023. We had $18.7 million in cash and cash equivalents at March 31, 2023, which consisted primarily of bank deposits and money market funds. We also had $108.4 million of short-term marketable securities at March 31, 2023, which consisted primarily of our investments in corporate and government debt securities.

Funding Requirements

We expect our operating expenses to increase significantly as we continue to develop and seek regulatory approvals and along with our partners, prepare for potential commercialization of our product candidates. Our research and development spending is expected to increase from historical levels during 2023 as we perform enabling work in preparation for the BackBeat CNT and Virtue SAB pivotal studies, commence enrollment of both planned studies and execute additional planned research and development activities. In addition, we expect our selling, general and administrative expenses to increase due to increases in headcount along with expenses associated with being a public company.

Based on current clinical development and other research and development plans and budget estimates, we anticipate that our cash and cash equivalents and marketable securities are sufficient to fund our operations into 2026. The amount and timing of our future funding requirements may change from current estimates and will depend on many factors, including the cost and pace of execution of clinical studies and research and development activities, the strength of results from clinical studies for our flagship product candidates and other research, development, manufacturing and commercial activities as well as the potential receipt of revenues under the Terumo Agreement, the Medtronic Agreement and/or future collaborations. We may seek additional funding through the issuance of new equity, may make drawdowns on our existing or new loan facilities, may receive milestone payments from the Terumo Agreement or through payments from collaborations or partnerships with other companies, and/or may realize cash from the sale of some or all of our strategic holdings, although there are no assurances in this regard.

Cash Flows

The following table summarizes our cash flow data for the periods indicated (in thousands):

	Three Months Ended March 31,	
	2023	2022
Net cash used in operating activities	$ (14,381)	$ (5,324)
Net cash used in investing activities	(43,529)	(47)
Net cash provided by financing activities	56,821	24,764
Net (decrease) increase in cash and cash equivalents	$ (1,089)	$ 19,393

Comparison of the Three Months Ended March 31, 2023 and 2022

Net Cash Flows from Operating Activities

Net cash used in operating activities for the three months ended March 31, 2023 was $14.4 million and primarily consisted of our net loss of $10.9 million and changes in net operating assets and liabilities of $4.4 million, which was offset by non-cash charges of $975,000. Our non-cash charges primarily consisted of a loss on fair value adjustment of warrant liability of $294,000 and stock-based compensation of $1.5 million, offset by $1.0 million related to accretion and interest of marketable securities. The net change in operating assets and liabilities were primarily due to a decrease in accounts payable and accrued expenses of $1.8 million, an increase in prepaid expenses and other assets of $1.5 million, and a decrease in deferred revenue of $1.0 million and various other immaterial changes.

Net cash used in operating activities for the three months ended March 31, 2022 was $5.3 million and primarily consisted of our net loss of $5.7 million and changes in net operating assets and liabilities of $265,000, which was offset by non-cash charges of $670,000. Our non-cash charges primarily consisted of a $220,000 adjustment in fair value of strategic investments, a loss on fair value adjustment of warrant liability of $145,000 and non-cash lease expense of $132,000. The net change in operating assets and liabilities were primarily due to a decrease in deferred revenue of $716,000, offset by various other immaterial changes.

Net Cash Flows from Investing Activities

Net cash used in investing activities for the three months ended March 31, 2023 was $43.5 million, which consisted of the purchase of $43.5 million of marketable securities, and $35,000 of property and equipment.

Net cash used in investing activities for the three months ended March 31, 2022 was $47,000, which consisted of the purchase of property and equipment.

Net Cash Flows from Financing Activities

Net cash provided by financing activities of $56.8 million for the three months ended March 31, 2023 was attributable to net proceeds from the Business Combination. For additional information, see Note 3 to the Consolidated Financial Statements.

Net cash provided by financing activities of $24.8 million for the three months ended March 31, 2022 was attributable to gross proceeds from the Series D-1 private equity financing of $27.3 million (the “Series D-1 Financing”), offset by $1.6 million of deferred financing costs and principal repayment of $1.0 million from the 2019 Loan and Security Agreement to Silicon Valley Bank. The Series D-1 Financing was a portion of the overall $110 million Series D financing that closed on June 30, 2022.

Contractual Obligations and Commitments

The following table summarizes our contractual obligations and commitments as of March 31, 2023 (in thousands):

	Payments Due by Period				
	Total	Less than 1 Year	1-3 Years	3-5 Years	More than 5 Years
Operating lease obligations	$ 2,489	$ 618	$ 1,079	$ 792	$ —
Debt, principal and interest[(1)]	14,091	1,104	9,562	3,425	—
Total	$ 16,580	$ 1,722	$ 10,641	$ 4,217	$ —

(1) In June 2022, Legacy Orchestra entered into the 2022 Loan and Security Agreement with Avenue Venture Opportunities Fund I and II. As part of the 2022 Loan and Security Agreement, Legacy Orchestra paid off the balance of the 2019 Loan and Security Agreement with Silicon Valley Bank. The 2022 Loan and Security Agreement will mature in June 2026. Refer to Note 14 to the Consolidated Financial Statements for additional information.

In addition, we enter into agreements in the normal course of business with clinical research organizations for work related to clinical trials and with vendors for preclinical studies and other services and products for operating purposes, which are cancelable at any time by us, generally upon 30 days prior written notice. These payments are not included in the above table of contractual obligations and commitments.

Critical Accounting Policies and Estimates

Our financial statements are prepared in accordance with U.S. GAAP. The preparation of the financial statements in conformity with U.S. GAAP requires our management to make a number of estimates and assumptions relating to the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the period. We evaluate our significant estimates on an ongoing basis, including estimates related to the total costs expected to be incurred though the completion of the combined performance obligation of the Terumo Agreement, research and development prepayments, accruals and related expenses and stock-based compensation. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. Actual results could differ from those estimates.

We believe that the accounting policies described below involve a significant degree of judgment and complexity. Accordingly, we believe these are the most critical to aid in fully understanding and evaluating our financial condition and results of operations. For further information, see Note 2 to the Consolidated Financial Statements.

Revenue Recognition

We recognize revenue under the core principle according to ASC 606 to depict the transfer of control to our customers in an amount reflecting the consideration we expect to be entitled to. In order to achieve that core principle, we apply the following five step approach: (1) identify the contract 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 a performance obligation is satisfied.

Our revenues are currently comprised of product revenue from the sale of FreeHold’s intracorporeal organ retractors and partnership revenues under the Terumo Agreement related to the development and commercialization of Virtue SAB.

Product Revenues

Product revenues related to sales of FreeHold’s intracorporeal organ retractors are recognized at a point-in-time upon the shipment of the product to the customer, and there are no significant estimates or judgments related to estimating the transaction price. The product revenues consist of a single performance obligation, and the payment terms are typically 30 days. Product revenues are recognized solely in the United States.

Partnership Revenues

To date, our partnership revenues have related to the Terumo Agreement described below. In future periods, partnership revenues may also include revenues related to the Medtronic Agreement, discussed in Note 5 to the Consolidated Financial Statements.

Legacy Orchestra entered into the Terumo Agreement as further described in Note 4 to the Consolidated Financial Statements. We assessed whether the Terumo Agreement fell within the scope of ASC 808 based on whether the arrangement involved joint operating activities and whether both parties have active participation in the arrangement and are exposed to significant risks and rewards. We determined that the Terumo Agreement did not fall within the scope of ASC 808. We then analyzed the arrangement pursuant to the provisions of ASC 606 and determined that the arrangement represents a contract with a customer and is therefore within the scope of ASC 606.

The promised goods or services in the Terumo Agreement include (i) license rights to our intellectual property and (ii) research and development services. We also have optional additional items in the Terumo Agreement, which are considered marketing offers and are accounted for as separate contracts with the customer if such option is elected by the customer, unless the option provides a material right which would not be provided without entering into the contract. Performance obligations are promised goods or services in a contract to transfer a distinct good or service to the customer. Promised goods or services are considered distinct when (i) the customer can benefit from the good or service on its own or together with other readily available resources or (ii) the promised good or service is separately identifiable from other promises in the contract. In assessing whether promised goods or services are distinct in the Terumo Agreement, we considered factors such as the stage of development of the underlying intellectual property, the capabilities of the customer to develop the intellectual property on their own or whether the required expertise is readily available.

We estimate the transaction price for the Terumo Agreement performance obligations based on the amount expected to be received for transferring the promised goods or services in the contract. The consideration includes both fixed consideration and variable consideration. At the inception of the Terumo Agreement, as well as at each reporting period, we evaluate the amount of potential payment and the likelihood that the payments will be received. We utilize either the most likely amount method or expected amount method to estimate the amount expected to be received based on which method better predicts the amount expected to be received. If it is probable that a significant revenue reversal would not occur, the variable consideration is included in the transaction price.

The Terumo Agreement contains development and regulatory milestone payments. At contract inception and at each reporting period, we evaluate whether the milestones are considered probable of being reached and estimate the amount to be included in the transaction price using the most likely amount method. If it is probable that a significant revenue reversal would not occur, the associated milestone value is included in the transaction price. At the end of each subsequent reporting period, we re-evaluate the probability of achievement of such development milestones and any related constraint, and if necessary, adjust our estimate of the overall transaction price. Any such adjustments are recorded on a cumulative catch-up basis, which would affect partnership revenues and earnings in the period of adjustment.

The Terumo Agreement also includes sales-based royalties and the license is deemed to be the predominant item to which the royalties relate. Accordingly, we will recognize royalty revenue when the related sales occur. To date, we have not recognized any royalty revenue under the arrangement.

We have determined that intellectual property licensed to Terumo and the research and development services to be provided through the premarket approval by the U.S. Food and Drug Administration (the “FDA”) for the ISR indication represent a combined performance obligation that is satisfied over time, and that the appropriate method of measuring progress for purposes of recognizing revenues relates to a proportional performance model that measures the proportional performance based on the costs incurred to date relative to the total costs expected to be incurred through the completion of the performance obligation. We evaluate the measure of progress at each reporting period and, if necessary, adjust the measure of performance and related revenue recognition.

In the three months ended March 31, 2023, we updated our estimates of the total costs expected to be incurred through the completion of the combined performance obligation. The impact of the changes in estimates resulted in an increase in partnership revenues of $81,000, which resulted in a de minimis effect on net loss per share, basic and diluted. In the three months ended March 31, 2022, the impact of the changes in estimates resulted in reduction of partnership revenues of $10,000, which resulted in a de minimis effect on net loss per share, basic and diluted.

We receive payments from Terumo based on billing schedules established in the contract. Such billings for milestone related events have 10-day terms from the date the milestone is achieved, royalty payments are 20-day terms after the close of each quarter, any optional services are 20 days after receipt of an invoice and sales of the SirolimusEFR are within 30 days after receipt of the shipping invoices. Upfront payments are recorded as deferred revenue upon receipt or when due until we perform our obligations under these arrangements. Amounts are recorded as accounts receivable when the right to consideration is unconditional.

In June 2022, Legacy Orchestra, BackBeat Medical, LLC and Medtronic entered into the Medtronic Agreement for the development and commercialization of BackBeat CNT for the treatment of HTN in patients indicated for a cardiac pacemaker. We determined that the arrangement is a collaboration within the scope of ASC 808. In addition, we concluded Medtronic is a customer for a good or service that is a distinct unit of account, and therefore the transactions in the Medtronic Agreement should be accounted for under ASC 606. Through March 31, 2023, there have been no amounts recognized as revenue under the Medtronic Agreement.

Research and Development Prepayments, Accruals and Related Expenses

We incur costs of research and development activities conducted by our third-party service providers, which include the conduct of preclinical and clinical studies. We are required to estimate our prepaid and accrued research and development costs at each reporting date. These estimates are made as of the reporting date of the work completed over the life of the individual study in accordance with agreements established with our service providers. We determine the estimates of research and development activities incurred at the end of each reporting period through discussion with internal personnel and outside service providers, as to the progress or stage of completion of trials or services, as of the end of the reporting period, pursuant to contracts with the third parties and the agreed upon fee to be paid for such services. Nonrefundable advance payments for goods or services to be received in the future for use in research and development activities are deferred and capitalized. The capitalized amounts are expensed as the related goods are accepted by us or the services are performed. Accruals are recorded for the amounts of services provided that have not yet been invoiced.

Warrants

We evaluate our warrants to determine if the contracts qualify as liabilities in accordance with ASC 480-10, *Distinguishing Liabilities from Equity*, and ASC 815, *Derivatives and Hedging*. If the warrant is determined to meet the criteria to be liability classified, the warrant liability is marked-to-market each balance sheet date and recorded as a liability, with the change in fair value recorded in our condensed consolidated statements of operations and comprehensive loss as gain (loss) on fair value adjustment of warrant liability within other income or expense.

In bundled transactions, the proceeds received from any debt instruments and liability classified warrants are allocated to the warrant at fair value first, and the residual value is then allocated to the debt instrument. Upon conversion or exercise of a warrant that is subject to liability treatment, the instrument is marked to fair value at the conversion or exercise date and the fair value is reclassified to equity. Equity classified warrants are recorded within additional paid-in capital at the time of issuance at fair value as of the issuance date and are not subject to subsequent remeasurement.

Stock-Based Compensation

We account for share-based payments at fair value. The fair value of stock options is measured using the Black-Scholes option-pricing model and the fair value of restricted stock is measured based on the fair value of the Company Common Stock underlying the award as of the grant date, described further below. For share-based awards that vest subject to the satisfaction of a service requirement, the fair value measurement date for stock-based compensation awards is the date of grant and the expense is recognized on a straight-line basis, over the vesting period. We account for forfeitures as they occur.

Prior to the Business Combination, due to the absence of an active market for Legacy Orchestra's common stock, Legacy Orchestra utilized methodologies, approaches, and assumptions consistent with the American Institute of Certified Public Accountants' Audit and Accounting Practice Guide: Valuation of Privately-Held Company Equity Securities Issued as Compensation to estimate the fair value of its common stock. The fair value of Legacy Orchestra's common stock was determined based upon a variety of factors, including valuations of Legacy Orchestra's common stock performed with the assistance of independent third-party valuation specialists; Legacy Orchestra's stage of development and business strategy, including the status of research and development efforts of its product candidates, and the material risks related to its business and industry; Legacy Orchestra's business conditions and projections; Legacy Orchestra's results of operations and financial position, including its levels of available capital resources; the valuation of publicly traded companies in the life sciences and biotechnology sectors, as well as recently completed mergers and acquisitions of peer companies; the lack of marketability of Legacy Orchestra's common stock as a private company; the prices of Legacy Orchestra's convertible preferred stock sold to investors in arm's length transactions and the rights, preferences and privileges of its convertible preferred stock relative to those of its common stock; the likelihood of achieving a liquidity event for the holders of Legacy Orchestra's common stock, such as an initial public offering or a sale of Legacy Orchestra given prevailing market conditions; trends and developments in its industry; the hiring of key personnel and the experience of management; and external market conditions affecting the life sciences and biotechnology industry sectors. Significant changes to the key assumptions underlying the factors used could result in different fair values of Legacy Orchestra's common stock at each valuation date. In determining the exercise prices for options granted and fair value of restricted stock, we have considered the fair value of the common stock as of the grant date.

Prior to the Business Combination, valuation analyses were conducted utilizing a probability weighted expected return method, in which the probability of a public company scenario was considered via either an initial public offering or special purpose acquisition company transaction. Subsequent to the Business Combination, fair value was determined by market prices of the Company Common Stock.

We classify stock-based compensation expense in our condensed consolidated statements of operations and comprehensive loss in the same manner in which the award recipients' payroll costs are classified or in which the award recipients' service payments are classified.

The fair value of each stock option grant is estimated on the date of grant using the Black-Scholes option pricing model, which is based on the assumptions discussed below. Each of these inputs is subjective and generally requires significant judgment and estimation by management.

- *Expected Term* — The expected term represents the period that stock-based awards are expected to be outstanding. Our historical share option exercise information is limited due to a lack of sufficient data points and does not provide a reasonable basis upon which to estimate an expected term. The expected term for option grants is therefore determined using the "simplified" method, as prescribed in the SEC's Staff Accounting Bulletin (SAB) No. 107. The simplified method deems the expected term to be the midpoint between the vesting date and the contractual life of the stock-based awards.

- *Expected Volatility* — The expected volatility was derived from the historical stock volatilities of comparable peer public companies within our industry that are considered to be comparable to our business over a period equivalent to the expected term of the stock-based awards, since there was no trading history of Legacy Orchestra's common stock and limited trading history of the Company.

- *Risk-Free Interest Rate* — The risk-free interest rate is based on the U.S. Treasury yield curve in effect at the date of grant for zero-coupon U.S. Treasury notes with maturities approximately equal to the stock-based awards' expected term.

- *Expected Dividend Yield* — The expected dividend yield is zero as neither the Company nor Legacy Orchestra has paid, and we do not anticipate paying, any dividends on the Company Common Stock in the foreseeable future.

- *Common Stock Valuation* — Prior to the Business Combination, given the absence of a public trading market for Legacy Orchestra's common stock, Legacy Orchestra's board of directors considered numerous subjective and objective factors to determine the best estimate of fair value of Legacy Orchestra's common stock underlying the stock options granted to its employees and non-employees. In determining the grant date fair value of Legacy Orchestra's common stock, Legacy Orchestra's board considered, among other things, contemporaneous valuations of its common stock prepared by an unrelated third-party valuation firm in accordance with the guidance provided by the American Institute of Certified Public Accountants 2013 Practice Aid, *Valuation of Privately-Held-Company Equity Securities Issued as Compensation*. Following the Business Combination, our board of directors determines the fair value of the Company Common Stock based on the closing price of the Company Common Stock on or around the date of grant.

During the three months ended March 31, 2023 and 2022, stock-based compensation was $1.5 million and $70,000, respectively. As of March 31, 2023, we had approximately $11.2 million of total unrecognized stock-based compensation, which we expect to recognize over a weighted-average period of approximately 3 years.

Recently Issued Accounting Pronouncements

A description of recently issued accounting pronouncements that may potentially impact our financial position and results of operations is disclosed in Note 2, Summary of Significant Accounting Policies, to the Consolidated Financial Statements.

Emerging Growth Company and Smaller Reporting Company Status

We are an "emerging growth company," as defined in Section 2(a) of the Securities Act of 1933 (the "Securities Act"), as modified by the Jumpstart Our Business Startups Act of 2012 (the "JOBS Act")., As such, we are eligible to take advantage of certain exemptions from various reporting requirements that are applicable to other public companies that are not emerging growth companies including, but not limited to, not being required to comply with the auditor attestation requirements of Section 404 of the Sarbanes-Oxley Act of 2002, reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements, and exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved.

Further, Section 102(b)(1) of the JOBS Act exempts emerging growth companies from being required to comply with new or revised financial accounting standards until private companies (that is, those that have not had a Securities Act registration statement declared effective or do not have a class of securities registered under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) are required to comply with the new or revised financial accounting standards. The JOBS Act provides that an emerging growth company can elect to opt out of the extended transition period and comply with the requirements that apply to non-emerging growth companies but any such election to opt out is irrevocable. We have elected not to opt out of such extended transition period which means that when a standard is issued or revised and it has different application dates for public or private companies, we, as an emerging growth company, can adopt the new or revised standard at the time private companies adopt the new or revised standard. This may make comparison of our Consolidated Financial Statements with another public company which is neither an emerging growth company nor an emerging growth company which has opted out of using the extended transition period difficult or impossible because of the potential differences in accounting standards used.

We will remain an emerging growth company until the earliest of (1) the last day of the fiscal year following the fifth anniversary of the closing of the initial public offering of HSAC2, (2) the last day of the fiscal year in which we have total annual gross revenue of at least $1.235 billion, (3) the last day of the fiscal year in which we are deemed to be a "large accelerated filer" as defined in Rule 12b-2 under the Exchange Act, which would occur if the market value of the Company Common Stock held by non-affiliates exceeded $700.0 million as of the last business day of the second fiscal quarter of such year, or (4) the date on which we have issued more than $1.0 billion in non-convertible debt securities during the prior three-year period.

We are also a "smaller reporting company" as defined in the Exchange Act. We may continue to be a smaller reporting company even after we are no longer an emerging growth company. We may take advantage of certain of the scaled disclosures available to smaller reporting companies and will be able to take advantage of these scaled disclosures for so long as (i) the market value of our voting and non-voting Company Common Stock held by non-affiliates is less than $250.0 million measured on the last business day of our second fiscal quarter, or (ii)(a) our annual revenue is less than $100.0 million during the most recently completed fiscal year and (b) the market value of our voting and non-voting Company Common Stock held by non-affiliates is less than $700.0 million measured on the last business day of our second fiscal quarter.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Not applicable.

Item 4. Controls and Procedures.

Upon the closing of the Merger on January 26, 2023, the sole business conducted by us is the business previously conducted by Legacy Orchestra. Also, as a result of the Merger, the internal control over financial reporting utilized by Legacy Orchestra prior to the Business Combination became the internal control over financial reporting of the combined company.

Evaluation of Disclosure Controls and Procedures.

We maintain "disclosure controls and procedures" (as defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act), that are designed to provide reasonable assurance that information required to be disclosed by us in the reports that 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 provide reasonable assurance that information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure.

Our management, with the participation of our Chief Executive Officer and our Chief Financial Officer, evaluated the effectiveness of our disclosure controls and procedures as of March 31, 2023, the end of the period covered by this Quarterly Report on Form 10-Q. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of March 31, 2023.

Changes in Internal Control Over Financial Reporting.

There was no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fiscal quarter ended March 31, 2023 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting, except that management has added resources to its accounting department and implemented a number of process changes to improve the overall control environment as a result of Legacy Orchestra becoming a public company.

Inherent Limitation on the Effectiveness of Internal Control.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures, or our internal controls, will prevent all error and all fraud. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that the objectives of the control system are met. Further, the design of a control system must reflect the fact that there are resource constraints, and the benefits of controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our Company have been detected.

PART II—OTHER INFORMATION

Item 1. Legal Proceedings.

From time to time, we may become involved in various claims and legal proceedings that arise in the ordinary course of our business. We are not currently a party to any material legal proceedings and are not aware of any pending or threatened legal proceeding against us that we believe would have a material adverse effect on our business, operating results or financial condition.

Item 1A. Risk Factors.

Because the Company has not filed a Form 10-K since the closing of the Business Combination, we have set forth below a complete set of the Company's risk factors.

Investing in our securities involves risks. Before you make a decision to buy our securities, in addition to the risks and uncertainties discussed above under "Cautionary Note Regarding Forward-Looking Statements," you should carefully consider the specific risks set forth herein. If any of these risks actually occur, it may materially harm our business, financial condition, liquidity and results of operations. As a result, the market price of our securities could decline, and you could lose all or part of your investment. Additionally, the risks and uncertainties described in this Quarterly Report on Form 10-Q are not the only risks and uncertainties that we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may become material and adversely affect our business.

Risks Related to Our Business and Products

We have a history of net losses, and we expect to continue to incur losses for the foreseeable future. If we ever achieve profitability, we may not be able to sustain it

We have incurred losses since our inception and expect to continue to incur losses for the foreseeable future. We have reported net losses of approximately $10.9 million for the three months ended March 31, 2023 and $35.6 million and $23.0 million for the years ended December 31, 2022 and 2021, respectively. As a result of these losses, as of March 31, 2023, we had an accumulated deficit of approximately $210.7 million. We expect to continue to incur net losses for the foreseeable future.

We will continue to incur substantial expenses without corresponding revenues unless and until we are able to obtain regulatory approval or certification and successfully commercialize some of our product candidates. To date, we have generated only limited revenue from our products, and we expect to incur significant expenses to complete our clinical program for our product candidates in the United States and elsewhere. We may never be able to obtain regulatory approval or certification for the marketing of our product candidates in the United States or internationally. Even if we are able to commercialize some of our products or product candidates, there can be no assurance that we will generate significant revenues or ever achieve profitability. We expect to continue to incur significant sales and marketing, research and development, regulatory and other expenses as we expand our marketing efforts to increase adoption of our products, expand existing relationships with our customers, obtain regulatory approvals or certifications for our product candidates, conduct clinical studies on our existing and planned product candidates and develop new product candidates or add new features to our existing products. In addition, we expect our selling, general and administrative expenses to increase due to the additional costs associated with being a public company. The net losses that we incur may fluctuate significantly from period to period. As a result of these increased expenditures, we will need to generate significant additional revenue in order to offset our operating expenses and achieve and sustain profitability. Accordingly, we may not achieve or maintain profitability, and we may continue to incur significant losses in the future. Even if we achieve profitability, we cannot be sure that we will remain profitable for any substantial period of time. If we do not achieve or sustain profitability, it will be more difficult for us to finance our business and accomplish our strategic objectives, either of which would have a material adverse effect on our business, financial condition, results of operations and prospects and may cause the market price of our common stock to decline.

We currently have a limited operating history and limited sources of revenue and may never become profitable

We commenced substantive operations in 2018. Our wholly-owned subsidiary Caliber Therapeutics, LLC ("Caliber") commenced operations in 2008, our wholly-owned subsidiary BackBeat Medical, LLC ("BackBeat") commenced operations in 2010 and our wholly-owned subsidiary FreeHold Surgical, LLC ("FreeHold") commenced operations in 2010. Our limited operating history makes it difficult to evaluate our current business and predict our future results, prospects or viability. To date, we have not generated significant revenue. Our ability to generate substantial revenue and ultimately become profitable depends primarily upon our ability, alone or with our partners, to successfully obtain regulatory approval and certification for and successfully commercialize our product candidates. Our ability to generate future revenue from our products or any existing or future product candidates also depends on a number of additional factors, including our or our partners' ability to:

- successfully complete clinical development of our product candidates, including necessary clinical studies;
- successfully develop the manufacturing processes for our product candidates;
- establish and maintain supply and manufacturing relationships with third parties that ensure adequate and legally-compliant production of our product candidates;
- complete and submit necessary applications for regulatory approvals and certifications for our product candidates in the United States and elsewhere;
- obtain and maintain requisite regulatory approvals and certifications for our product candidates in the United States and elsewhere;
- comply with regulations enforced by the FDA, and other comparable regulatory authorities with respect to our marketing of products and product candidates or modified products or product candidates;
- obtain necessary FDA or foreign regulatory approvals or certifications, for our product candidates or for future product modifications or indication expansions for any of our product candidates that receives regulatory approval or certification;
- obtain coverage and adequate reimbursement from third-party payors, including government and private payors, for our product candidates;
- find distribution partners to help us sell, market and distribute our products globally;
- achieve market acceptance for our products;
- establish, maintain and protect our intellectual property rights; and
- attract, hire and retain qualified personnel.

In addition, because of the numerous risks and uncertainties associated with drug/device and software/device combination product development, including that our product candidates may not advance through development or achieve the endpoints of applicable clinical studies, we are unable to predict the timing or amount of our expenses, or if or when we will achieve or maintain revenues or profitability. In addition, our expenses could increase beyond expectations if we decide to or are required by the FDA or foreign regulatory authorities or notified bodies to perform non-clinical tests or clinical studies or trials for our product candidates in addition to those that we currently anticipate. If we complete the development and regulatory processes of our product candidates, we or our partners anticipate incurring significant costs associated with launching and commercializing our product candidates. Even if we generate revenues from the sale of our products (or through the sale of products by our partners), we may not be profitable and may need to obtain additional funding to continue operations. If we fail to achieve profitability or do not sustain profitability on a continuing basis, then we may be unable to continue our operations at planned levels and be forced to reduce our operations.

If we do not achieve our projected development and commercialization goals, our business may be harmed

For planning purposes, we estimate the timing of the accomplishment of various scientific, clinical, regulatory and other product development and commercialization goals, which we sometimes refer to as milestones. These milestones include the commencement or completion of scientific studies and clinical studies and the submission of regulatory applications. We base these milestones on a variety of assumptions, which are subject to numerous risks and uncertainties. Further, our collaboration agreement with Terumo Medical Corporation ("Terumo"), as further described herein, includes payments tied to the achievement of certain milestones, and we expect that future collaboration agreements may have similar provisions. There is a risk we will not achieve these milestones on a timely basis or at all. Even if we achieve these milestones, the actual timing of the achievement of these milestones can vary dramatically compared to our estimates, often for reasons beyond our control, depending on numerous factors, including:

- our ability and/or the ability of third-party vendors and partners to manufacture our product candidates;
- our ability to source critical components or materials for the manufacture of our product candidates;
- the rate of progress, costs and results of our clinical studies and research and development activities;
- our ability to identify and enroll patients who meet clinical study eligibility criteria;
- the extent of scheduling conflicts with participating physicians and clinical institutions;
- adverse reactions reported during clinical studies or commercialization;
- the ability of our product candidates to meet the standards for regulatory approval or certification;
- the receipt of marketing approvals, clearances or certifications by our competitors and by us from the FDA and other regulatory agencies or notified bodies; and
- other actions by regulators, including actions related to a class of products.

If we do not meet these milestones for our products or if we are delayed in achieving these milestones, the development and commercialization of new product candidates, modifications of existing products or sales of existing products for new indications may be prevented or delayed, which could damage our reputation or materially adversely affect our business. Further, we may not receive milestone-based payments from partners on a timely basis or at all. In addition, Terumo has the right to terminate, and other partners may have the right to terminate or renegotiate, agreements if certain milestones are not achieved at all or on a timely basis. Even if we achieve a milestone for a product or product candidate, market acceptance for the product or product candidate is not assured. See "*— Risks Related to Our Reliance on Third Parties — We did not meet the target achievement dates relating to certain milestone payments, and we may not meet other target achievement dates relating to additional milestone payments, under our manufacturing and distribution agreement with Terumo, which may have an adverse effect on our relationship with Terumo and our results of operations*."

The clinical study process required to obtain regulatory approvals or certifications carries substantial risks and is lengthy and expensive with uncertain outcomes. If our clinical studies are unsuccessful or significantly delayed, or if we do not complete our clinical studies, our business may be harmed

In order to obtain approval of a Pre-Market Approval application (a "PMA") from the FDA for a device, such as our Virtue SAB drug/device combination product candidate, BackBeat CNT or CNT-HF which is designed to be integrated with the collaboration of device manufacturers into their existing medical devices such as pacemakers, as well as other future product candidates, or marketing approval for a new drug, such as our extended release formulation of sirolimus called SirolimusEFR as a standalone product candidate, we must conduct well-controlled clinical studies designed to assess the safety and efficacy of the product candidate. Clinical development is a long, expensive and uncertain process and is subject to delays and to the risk that products may ultimately prove unsafe or ineffective in treating the indications for which they are designed. Completion of the clinical studies required to support a marketing authorization (inclusive of any application or approval for clinical use or commercial sale in a given market) usually takes several years or more. We cannot assure you that we will successfully complete clinical testing of our products within the periods we have planned, or at all. Even if we achieve positive interim or preliminary results in clinical studies, these results do not necessarily predict final results, and positive results in early trials do not necessarily indicate success in later trials. Moreover, preclinical and clinical data are often susceptible to varying interpretations and analyses, and many companies have suffered significant setbacks in advanced clinical studies, even after receiving positive results in earlier trials. Any of our products may malfunction or may produce undesirable adverse effects that could cause us or regulatory authorities to interrupt, delay or halt clinical studies. We, the FDA, or another regulatory authority may suspend or terminate clinical studies at any time to avoid exposing trial participants to unacceptable health risks.

Additionally, the FDA or other regulatory authorities or notified bodies may disagree with our interpretation of the data from our preclinical studies and clinical studies, or may find the clinical study design, conduct or results inadequate to prove safety or efficacy, and may require us to pursue additional preclinical studies or clinical studies, which could further delay or prevent the approval or certification of our products. The data we collect from our preclinical studies and clinical studies may not be sufficient to support potential FDA or foreign approval or certification, and if we are unable to demonstrate the safety and efficacy of our product candidates in our clinical studies, we will be unable to obtain regulatory approval or certification to market our products.

We have in the past and may in the future experience unforeseen events during, or because of, the clinical study process that could delay or prevent us from receiving regulatory approval or certification for new products, modification of existing products, or approval or certification of new indications for existing products including:

- we may be unable to generate sufficient preclinical toxicology or other in vivo or in vitro data to support the initiation or continuation of clinical studies;
- the FDA or similar foreign regulatory authorities may find the product candidates are not sufficiently safe for investigational use in humans;
- officials at the FDA or similar foreign regulatory authorities may interpret data from preclinical testing and clinical studies in less favorable ways than we do;
- there may be delays or failures in obtaining regulatory authorization from the FDA or other regulatory authorities to commence a clinical study;
- there may be delays or failures in the manufacture or supply of devices and/or drugs for use in clinical studies;
- there may be delays in reaching agreement on acceptable terms with prospective CROs and clinical study sites, the terms of which can be subject to extensive negotiation and may vary significantly among different CROs and clinical study sites;
- there may be delays in identifying, recruiting and training suitable investigators;
- there may be delays in obtaining institutional review board (“IRB”) or ethics committee (“EC”) approvals or governmental approvals, authorizations or allowances to conduct clinical studies at prospective sites;
- enrollment in our clinical studies may be slower than we anticipate, or we may experience high drop-out rates of subjects from our clinical studies, resulting in significant delays;
- delays in recruiting, screening and enrolling patients and delays caused by patients withdrawing from clinical studies or failing to return for post-treatment follow-up;
- failure by our CROs, other third parties or us to adhere to clinical study protocols, failure to perform in accordance with the FDA’s or any other regulatory authority’s good clinical practice requirements (“GCPs”), or applicable regulatory guidelines in other countries, or occurrence of adverse events in trials of comparable products conducted by other companies;
- the occurrence of adverse events associated with the product candidate that are viewed to outweigh its potential benefits;

- we may have to amend clinical study protocols or conduct additional studies to reflect changes in regulatory requirements or guidance, which we may be required to submit to an IRB or EC and/or regulatory authorities for re-examination;

- the cost of clinical studies may be greater than we anticipate;

- we may have trouble in managing multiple clinical sites;

- our clinical studies may produce negative or inconclusive results, or may not meet the level of statistical significance required by the FDA or other regulatory authorities, and we may decide, or regulators may require us, to conduct additional clinical or preclinical testing or to abandon programs;

- the FDA or similar foreign regulatory authorities may find our or our suppliers' manufacturing processes or facilities unsatisfactory;

- the FDA or similar foreign regulatory authorities may change their approval policies or adopt new regulations that may negatively affect or delay our ability to bring a product candidate to market or receive approvals or certification to treat new indications;

- our regulatory approvals may be tied to our current supply chain, especially for combination products, and if we need to change locations or vendors, we may be required to repeat preclinical testing, including biocompatibility testing, that would delay or prevent our ability to produce clinical or commercial products;

- we may be required to transfer manufacturing processes to larger-scale facilities operated by a CMO, and could be adversely affected by delays or failures by our CMOs or us to make any necessary changes to such manufacturing process; and

- third parties may be unwilling or unable to satisfy their contractual obligations to us.

Patient enrollment in clinical studies and completion of patient follow-up depend on many factors, including the size of the patient population, the nature of the trial protocol, the proximity of patients to clinical sites, the eligibility criteria for the clinical study, patient compliance, competing clinical studies and clinicians' and patients' perceptions as to the potential advantages of the product candidate being studied in relation to other available therapies, including any new treatments that may be approved for the indications we are investigating. In addition, patients participating in our clinical studies may drop out before completion of the trial or experience adverse medical events unrelated to our product candidates. Delays in patient enrollment or failure of patients to continue to participate in a clinical study may delay commencement or completion of the clinical study, cause an increase in the costs of the clinical study and delays, or result in the failure of the clinical study. In addition, disruptions caused by the COVID-19 pandemic, including any strains or variants of the virus, may increase the likelihood that we encounter such difficulties or delays in initiating, enrolling, conducting or completing our planned and ongoing clinical studies.

We could also encounter delays if a clinical study is suspended or terminated by us, by the IRBs of the institutions at which such studies are being conducted, by the Data Safety Monitoring Board for such trial or by the FDA or other regulatory authorities. Such authorities may impose such a suspension or termination due to a number of factors, including failure to conduct the clinical study in accordance with regulatory requirements or our clinical protocols, inspection of the clinical study operations or trial site by the FDA or other regulatory authorities resulting in the imposition of a clinical hold, unforeseen safety issues or adverse side effects, failure to demonstrate a benefit from using the investigational product, changes in governmental regulations or administrative actions or lack of adequate funding to continue the clinical study. If we experience delays in the completion of, or termination of, any clinical study, the approval, certification and commercial prospects of our device will be harmed, and our ability to generate product revenues from any of these product candidates will be delayed. In addition, any delays in completing our clinical studies will increase our costs, slow down the approval or certification process and jeopardize our ability to commence product sales and generate revenues. Any of these occurrences may harm our business, financial condition and prospects significantly. In addition, many of the factors that cause, or lead to, a delay in the commencement or completion of clinical studies may also ultimately lead to the denial of regulatory approval of our product candidates.

Failures or perceived failures in our clinical studies will delay and may prevent our product candidate development and regulatory approval or certification process, damage our business prospects and negatively affect our reputation and competitive position

Failure can occur at any stage of clinical testing. Our clinical studies may produce negative or inconclusive results, and we may decide, or regulators may require us, to conduct additional clinical and non-clinical testing in addition to those we have planned. Our failure to adequately demonstrate the safety and efficacy of our system or any product we may develop in the future would prevent receipt of regulatory approval or certification and, ultimately, the commercialization of that product or indication for use. Further, regulators may determine that our financial relationships with certain principal investigators who provide us with consulting services from time to time for which we separately compensate them resulted in a perceived or actual conflict of interest that may have affected the interpretation of a study, the integrity of the data generated at the applicable clinical study site or the utility of the clinical study itself. Even if our future products are approved in the United States, commercialization of our product candidates in foreign countries would require approval by regulatory authorities or certification by notified bodies in those countries. Approval and certification procedures vary among jurisdictions and can involve requirements and administrative review periods different from, and greater than, those in the United States, including additional preclinical studies or clinical studies. Any of these occurrences could have an adverse effect on our business, financial condition and results of operations.

Clinical studies must be conducted in accordance with the laws and regulations of the FDA and other applicable regulatory authorities' legal requirements, regulations or guidelines, and are subject to oversight by these governmental agencies and IRBs at the medical institutions where the clinical studies are conducted. In addition, clinical studies must be conducted with supplies of our product candidates produced under current good manufacturing practice ("cGMP"), requirements and other regulations. Furthermore, we rely on CROs, consultants and clinical study sites to ensure the proper and timely conduct of our clinical studies and while we have agreements governing their committed activities, we have limited influence over their actual performance. We depend on our collaborators and on medical institutions and CROs to conduct our clinical studies in compliance with GCP requirements. To the extent our collaborators or the CROs fail to enroll participants for our clinical studies, fail to conduct the study to GCP standards or are delayed for a significant time in the execution of trials, including achieving full enrollment, we may be affected by increased costs, program delays or both. In addition, clinical studies that are conducted in countries outside the United States may subject us to further delays and expenses as a result of increased shipment costs, additional regulatory requirements and the engagement of non-U.S. CROs, as well as expose us to risks associated with clinical investigators who are unknown to the FDA, and different standards of diagnosis, screening and medical care.

Even if we obtain all necessary FDA approvals, our product candidates may not achieve or maintain market acceptance and may be subject to additional regulatory requirements post-approval

Even if we obtain FDA approval of our product candidates, or new indications for our products, market acceptance of our products in the healthcare community, including physicians, patients and third-party payors, will depend on many factors, including:

- our ability to provide incremental clinical and economic data that shows the safety and clinical efficacy and cost-effectiveness of, and patient benefits from, our products;
- the availability of alternative treatments;
- whether our products are included on insurance company formularies or coverage plans;
- the willingness and ability of patients and the healthcare community to adopt new technologies;
- customer demand;
- liability risks generally associated with the use of new product candidates;
- the training required to use a new product candidate;

- perceived inadequacy of evidence supporting clinical benefits or cost-effectiveness over existing alternatives;
- the convenience and ease of use of our products relative to other treatment methods;
- the pricing and reimbursement of our products relative to other treatment methods; and
- the marketing and distribution support for our products.

Even if we obtain all necessary FDA approvals, our products may fail to achieve market acceptance. If our products achieve market acceptance, they may not maintain that market acceptance over time if competing products or technologies are introduced that are received more favorably or are more cost-effective. Failure to achieve or maintain market acceptance would limit our ability to generate revenue and would have a material adverse effect on our business, financial condition, results of operations and prospects. Further, our products are subject to ongoing regulatory oversight and may require additional clinical data to support maintenance of regulatory approvals.

We may be unable to compete successfully with larger companies in our highly competitive industry

The medical technology and pharmaceutical industries are highly competitive and the medical device industry is characterized by rapid and significant change. Many of our current and potential competitors have substantially greater financial, manufacturing, marketing, and technical resources than we do. Larger competitors may have substantially larger sales and marketing operations than we or our partners have or plan to have and may have greater name recognition. This may allow those competitors to spend more time with potential customers and to focus on a larger number of potential customers, which would give them a significant advantage over the sales and marketing team we would use and our international distributors in making sales.

Larger competitors may also have broader product lines, which enable them to offer customers bundled purchase contracts and quantity discounts. These competitors may have more experience than we have in research and development, marketing, manufacturing, preclinical testing, conducting clinical studies, obtaining FDA and foreign regulatory approvals or certifications and marketing approved or certified products. Our competitors may discover technologies and techniques, or enter into partnerships and collaborations, to develop competing products that are more effective or less costly than our products or the products we may develop. There can be no assurance that other companies will not succeed in developing or marketing devices and products that are more effective than our technology or products or that would render our technology or products obsolete or noncompetitive. Academic institutions, government agencies, and other public and private research organizations may seek patent protection regarding potentially competitive products or technologies and may establish exclusive collaborative or licensing relationships with our competitors. Our competitors may be better equipped than we are to respond to competitive pressures. Competition will likely intensify.

Additionally, many companies in the healthcare industry, including healthcare provider systems, are consolidating to create new companies with greater market power, and we expect that to continue. As the healthcare industry consolidates, competition to provide goods and services to industry participants will become more intense. These industry participants may try to use their market power to negotiate price concessions or reductions for medical devices including those produced by us. If we reduce our prices because of consolidation in the healthcare industry, our revenue would decrease and our consolidated earnings, financial condition, or cash flows would suffer.

Our operating results may fluctuate significantly, which makes our future operating results difficult to predict and could cause our operating results to fall below expectations or any guidance we may provide

Our quarterly and annual operating results may fluctuate significantly, which makes it difficult for us to predict our future operating results. These fluctuations may occur due to a variety of factors, many of which are outside of our control, including, but not limited to:

- the level of demand for our products and any approved or certified products, which may vary significantly;
- expenditures that we may incur to acquire, develop or commercialize additional products and technologies;
- the ability to obtain, and timing and cost of obtaining regulatory approvals or certifications for planned or future products or indications;

- the degree of competition in our industry and any change in the competitive landscape of our industry, including consolidation among our competitors or future partners;
- coverage and reimbursement policies with respect to our products, if approved or certified, and potential future products that compete with our products;
- the timing and success or failure of preclinical studies or clinical studies for our products or any future products we develop or competing products;
- the timing of customer orders or medical procedures using our products and the number of available selling days in any quarterly period, which can be impacted by holidays, the mix of products sold and the geographic mix of where products are sold;
- the timing and cost of, and level of investment in, research, development, regulatory approval or certification and commercialization activities relating to our products, which may change from time to time;
- the cost of manufacturing our products, which may vary depending on the quantity of production and the terms of our agreements with third-party suppliers and manufacturers; and
- future accounting pronouncements or changes in our accounting policies.
- The cumulative effects of these factors could result in large fluctuations and unpredictability in our quarterly and annual operating results. As a result, comparing our operating results on a period-to-period basis may not be meaningful. Investors should not rely on our past results as an indication of our future performance.

This variability and unpredictability could also result in our failing to meet the expectations of industry or financial analysts or investors for any period. If our revenue or operating results fall below the expectations of analysts or investors or below any forecasts we may provide to the market, it could have a material adverse effect on our business, financial condition, results of operations or prospects.

Our loan and security agreement contains operating covenants and restrictions that may restrict our business and financing activities

We are party to a loan and security agreement with affiliates of Avenue Venture Capital Fund, L.P. (“Avenue Capital”), pursuant to which the lenders are granted a security interest over all of our assets, including intellectual property. This agreement restricts our ability to, among other things:

- incur certain additional indebtedness;
- create liens on our assets;
- pay or declare dividends, or repurchase our stock;
- liquidate or dissolve;
- enter into a “change of control” (as defined therein);
- sell certain assets;
- make certain investments;
- enter into transactions with affiliates;
- engage in any business other than our current business;
- prepay any indebtedness;
- make any payment on subordinated indebtedness; or
- create or incur certain leases for personal property.

The operating covenants and restrictions in the loan and security agreement, as well as covenants and restrictions in any future financing agreements that we may enter into, may restrict our ability to finance our operations, engage in business activities or expand or fully pursue our business strategies. Our ability to comply with these covenants may be affected by events beyond our control, and we may not be able to meet those covenants. A breach of any of these covenants could result in a default under the loan and security agreement or any future financing agreement, which could cause all of the outstanding indebtedness under the facility to become immediately due and payable and terminate all commitments to extend further credit.

We cannot assure you that we will continue to maintain sufficient cash reserves or that our business will ever generate cash flow from operations at levels sufficient to permit us to pay principal, premium, if any, and interest on our indebtedness, or that our cash needs will not increase. If we are unable to generate sufficient cash flow or otherwise obtain funds necessary to make required payments, or if we fail to comply with the various requirements of our loan and security agreement with Avenue Capital, or any indebtedness which we may incur in the future, we would be in default under our agreement with Avenue Capital or other indebtedness we may incur in the future. Any default under our agreement with Avenue Capital, or any indebtedness that we may incur in the future, could have a material adverse effect on our business, results of operations and financial condition.

The sizes of the markets for product candidates have not been established with precision, and may be smaller than we estimate

Our estimates of the annual total addressable markets for our product candidates are based on a number of internal and third-party estimates, including, without limitation, the number of patients with specified diseases and the assumed prices at which we will be able to sell any products we develop in various markets. While we believe our assumptions and the data underlying our estimates are reasonable, these assumptions and estimates may not be correct and the conditions supporting our assumptions or estimates may change at any time, thereby reducing the predictive accuracy of these underlying factors. In addition, our estimates of the sizes of the peripheral artery disease ("PAD") and coronary artery disease ("CAD") patient population may include patients who are asymptomatic or in the early stages of disease; these patients might never progress to more advanced disease stages and, accordingly, might never be likely candidates for treatment with our products. As a result, our estimates of the annual total addressable market for our current or future products may prove to be incorrect. If the actual number of patients who would benefit from our products, the price at which we will be able to sell future products, or the annual total addressable market for our products is smaller than we have estimated, it may impair future sales of any product we develop and have an adverse impact on our business.

The long-term macroeconomic effects of the COVID-19 pandemic and any future pandemic or epidemic could adversely impact our business, including our clinical studies and financial condition

Outbreaks of contagious disease, including COVID-19, or other adverse public health developments in the U.S. or worldwide could have a material adverse effect on our business, including our clinical trials and financial condition. While many of the direct impacts of the COVID-19 pandemic have eased, the longer-term macroeconomic effects on global supply chains, inflation, labor shortages and wage increases continue to impact many industries, including ours. Moreover, with the potential for new strains of existing viruses to emerge, or other pandemics or epidemics, governments and businesses may re-impose aggressive measures to help slow its spread in the future.

Long-term macroeconomic effects from a pandemic or epidemic, including from supply and labor shortages and workforce reductions in response to challenging economic conditions, may have an adverse impact on our business. In addition, COVID-19 caused, and any future pandemic or epidemic may cause, delays with respect to regulatory approvals or certifications for clinical studies, the initiation of clinical studies and the coordination of follow-up with respect to clinical studies, as well as delays in receiving supplies and third-party testing results from vendors. The emergence of a new pandemic or epidemic may also cause us to experience additional disruptions that could severely impact our business and clinical studies, including:

- delays or difficulties in enrolling patients in our clinical studies;
- delays or difficulties in clinical site initiation, including difficulties in recruiting clinical site investigators and clinical site staff;

- diversion of healthcare resources away from the conduct of clinical studies, including the diversion of hospitals serving as our clinical study sites and hospital staff supporting the conduct of our clinical trials;

- interruption of key clinical study activities, such as clinical study site monitoring, due to limitations on travel imposed or recommended by federal or state governments, employers and others or interruption of clinical study subject visits and study procedures, the occurrence of which could affect the integrity of clinical study data;

- risk that participants enrolled in our clinical studies will contract the contagious disease while the clinical study is ongoing, which could impact the results of the clinical study, including by increasing the number of observed adverse events;

- limitations in employee resources that would otherwise be focused on the conduct of our clinical studies, including because of sickness of employees or their families or the desire of employees to avoid contact with large groups of people;

- delays in receiving authorizations, allowances or approvals from local regulatory authorities to initiate our planned clinical studies;

- delays in clinical sites receiving the supplies and materials needed to conduct our clinical studies, including interruption in global shipping that may affect the transport of clinical study materials, such as investigational materials used in our clinical studies;

- changes in local regulations as part of a response to such pandemic or epidemic which may require us to change the ways in which our clinical studies are conducted, which may result in unexpected costs, or the discontinuation of such clinical studies altogether;

- interruptions or delays in preclinical studies due to restricted or limited operations at research and development laboratory facilities;

- delays in necessary interactions with local regulators, ethics committees and other important agencies and contractors due to limitations in employee resources or forced furlough of government employees; and

- refusal of the FDA to accept data from clinical studies in affected geographies.

The full extent of the impact and effects of COVID-19, and any future pandemics or epidemics, will depend on future developments, including, among other factors, how rapidly variants develop, availability, acceptance and effectiveness of vaccines along with related travel advisories, quarantines and restrictions, the recovery time of the disrupted supply chains and industries, the impact of labor market interruptions, the impact of government interventions, and uncertainty with respect to the duration of the global economic slowdown. COVID-19, or any future pandemics or epidemics, and resulting impacts on the financial, economic and capital markets environment, and future developments in these and other areas present uncertainty and risk with respect to our business and financial results.

Interim, "top-line" and preliminary data from our clinical studies that we announce or publish from time to time may change as more patient data become available and are subject to audit and verification procedures that could result in material changes in the final data

From time to time, we may publicly disclose preliminary or top-line data from our preclinical studies and clinical studies, which is based on a preliminary analysis of then-available data, and the results and related findings and conclusions are subject to change following a more comprehensive review of the data related to the particular study or trial. We also make assumptions, estimations, calculations and conclusions as part of our analyses of data, and we may not have received or had the opportunity to fully and carefully evaluate all data. As a result, the top-line or preliminary results that we report may differ from future results of the same studies, or different conclusions or considerations may qualify such results, once additional data have been received and fully evaluated. Top-line data also remain subject to audit and verification procedures that may result in the final data being materially different from the preliminary data we previously published. As a result, top-line data should be viewed with caution until the final data are available.

From time to time, we may also disclose interim data from our preclinical studies and clinical studies. Interim data from clinical studies that we may complete are subject to the risk that one or more of the clinical outcomes may materially change as patient enrollment continues and more patient data become available or as patients from our clinical studies continue other treatments for their disease. Adverse differences between preliminary or interim data and final data could significantly harm our business prospects. Further, disclosure of interim data by us or by our competitors could result in volatility in the price of our common stock.

Further, others, including regulatory agencies, may not accept or agree with our assumptions, estimates, calculations, conclusions or analyses or may interpret or weigh the importance of data differently, which could impact the value of the particular program, the approvability or commercialization of the particular product candidate or product and our company in general. In addition, the information we choose to publicly disclose regarding a particular study or clinical study is based on what is typically extensive information, and you or others may not agree with what we determine is material or otherwise appropriate information to include in our disclosure. If the interim, top-line, or preliminary data that we report differ from actual results, or if others, including regulatory authorities, disagree with the conclusions reached, our ability to obtain approval or certification for, and commercialize, our product candidates may be harmed, which could harm our business, operating results, prospects or financial condition.

Our product candidates have in the past and may in the future be associated with serious adverse events, undesirable side effects or have other properties that could halt their clinical development, prevent their regulatory approval or certification, limit their commercial potential or result in significant negative consequences

Adverse events or other undesirable side effects caused by our product candidates could cause us or regulatory authorities to interrupt, delay or halt clinical studies and could result in a more restrictive label or the delay or denial of regulatory approval or certification by the FDA or other comparable foreign regulatory authorities or notified bodies.

During the conduct of clinical studies, patients report changes in their health, including illnesses, injuries, and discomforts, to their study doctor. Often, it is not possible to determine whether or not the product candidate being studied caused these conditions. It is possible that as we test our product candidates in larger, longer and more extensive clinical studies, or as use of these product candidates becomes more widespread if they receive regulatory approval or certification, illnesses, injuries, discomforts and other adverse events that were observed in previous trials, as well as conditions that did not occur or went undetected in previous trials, will be reported by patients. Many times, side effects are only detectable after investigational products are tested in large-scale clinical studies or, in some cases, after they are made available to patients on a commercial scale following approval or certification.

For example, during the initial study period for MODERATO I, there were eleven serious adverse events (“SAEs”) in seven of the 27 study patients. One event was adjudicated as probably related to the implant procedure for the Moderato device. Four events in four patients were adjudicated as possibly related to the Moderato device (atrial fibrillation, myocardial infarction with symptoms of heart failure, cardiac asthma, and arrhythmia due to ventricular oversensing).

During the extended 21-month follow-up period, that included 24 patients who continued with BackBeat CNT, there were 25 SAEs in twelve patients. Five events in three patients were adjudicated as possibly device related. These included two events of atrial fibrillation the same patient, pneumonia with cardiac decompensation and dyspnea with cardiac decompensation in one patient, and cardiac decompensation in one patient.

For the MODERATO II study, there were no major adverse cardiac events (“MACE”) in the BackBeat CNT group and three MACE in two patients in the control group (one death from cancer and two cardiac events) at six months. During the randomized phase of the study, there were eight SAEs in four patients in the control group (n=21) and none in the treatment group (n=26). During the extended 18-month follow-up period that included treatment patients (n=26) and crossover-to-treatment patients (n=14), there were 26 SAEs in 16 patients. Over the entire three-year period of the SABRE study, a total of 66 SAEs occurred in 32 of the 50 study patients.

If any serious adverse events occur, clinical studies or commercial distribution of any product candidates or products we develop could be suspended or terminated, and our business could be seriously harmed. Treatment-related side effects could also affect patient recruitment and the ability of enrolled patients to complete the trial or result in potential liability claims. Regulatory authorities could order us to cease further development of, deny approval of, or require us to cease selling any product candidates or products for any or all targeted indications. If we are required to delay, suspend or terminate any clinical study or commercialization efforts, the commercial prospects of such product candidates or products may be harmed, and our ability to generate product revenues from them or other product candidates that we develop may be delayed or eliminated. Additionally, if one or more of our product candidates receives marketing approval or certification and we or others later identify undesirable side effects or adverse events caused by such products, a number of potentially significant negative consequences could result, including but not limited to:

- regulatory authorities may suspend, limit or withdraw approvals or certifications of such product, or seek an injunction against its manufacture or distribution;
- regulatory authorities may require additional warnings on the label, including "boxed" warnings, or issue safety alerts, Dear Healthcare Provider letters, press releases or other communications containing warnings or other safety information about the product;
- we may be required to change the way the product is administered or conduct additional clinical studies or post-approval studies;
- we may be required to create a risk evaluation and mitigation strategy ("REMS") or similar risk management measures, which could include a medication guide outlining the risks of such side effects for distribution to patients;
- we may be subject to fines, injunctions or the imposition of criminal penalties;
- we could be sued and held liable for harm caused to patients; and
- our reputation may suffer.

Any of these events could prevent us from achieving or maintaining market acceptance of the particular product candidate, if approved or certified, and could seriously harm our business.

We depend on attracting, retaining and developing key management, clinical, scientific, regulatory, quality, marketing and other expert personnel, and losing these personnel could impair the development and sales of our products or product candidates

We are highly dependent on our senior management and other key personnel. Our success depends on our continued ability to attract, retain, develop and motivate highly qualified management, clinical, scientific and sales and marketing personnel. Although we have entered into employment agreements with certain of our executive officers, our employees, including our executive officers, are employed "at will," and each employee can terminate his or her employment with us at any time. We also do not maintain "key person" insurance policies on any of our officers or our other employees. The competition for qualified personnel in the medical innovation industry is intense, and we may incur significant costs to attract and retain them. We will need to hire additional personnel as we continue to expand our development activities and drive sales of our products or product candidates. We may not attract, retain and develop quality personnel on acceptable terms due to the competition for such personnel. If we are not able to attract and retain necessary personnel to accomplish our business objectives, we may experience constraints that will significantly impede the achievement of our development objectives, our ability to raise additional capital and our ability to implement our business strategy.

If we make acquisitions, we could incur significant costs and encounter difficulties that harm our business

In the ordinary course of our business, we expect to from time to time evaluate the acquisition of, investment in or in-license of complementary products, technologies or businesses, although we do not currently have any agreements, arrangements or commitments with respect to any potential acquisition, investment or license. If we engage in such acquisitions, investments or in-licenses, we may incur significant transaction and integration costs and have difficulty integrating the acquired personnel, operations, products or technologies or otherwise realizing synergies or other benefits from the acquisitions, investments or in-licenses. The integration process could result in the loss of key employees, loss of key customers, loss of key vendors, decreases in revenue and increases in operating costs, as well as the disruption of our business. Acquisitions may disrupt our ongoing business, divert the time of our management and employees, increase our expenses, subject us to liabilities and increase our risk of litigation, all of which could harm our business. If we use cash to acquire companies, products or technologies, it may divert resources otherwise available for other purposes or increase our debt. If we use our capital stock to acquire companies, products or technologies, we may experience a change of control or our stockholders may experience substantial dilution or both. In addition, anticipated benefits of any future acquisitions may not materialize. Any of these risks, if realized, could materially and adversely affect our business, financial condition, results of operation and prospects.

If we do not manage our growth or control costs related to growth, our results of operations will suffer

We intend to grow our business by commercializing our product candidates with partners when approved and, expanding our product development pipeline, possibly through acquisitions or other business combinations. Growth could place significant strain on our management, employees, operations, operating and financial systems, and other resources. To accommodate significant growth, we could be required to open additional facilities, expand and improve our information systems and procedures and hire, train, motivate and manage a growing workforce, all of which would increase our costs. Our systems, facilities, procedures and personnel may not be adequate to support our future operations. Further, we may not maintain or accelerate our current growth, manage our expanding operations or achieve planned growth on a timely and profitable basis.

Litigation and other legal proceedings may adversely affect our business

From time to time we may be involved in various litigation matters, which could have an adverse impact on our reputation, business and financial condition and divert the attention of our management from the operation of our business. Claims arising out of actual or alleged violations of the law could be asserted against us by individuals, either individually or through class actions, by governmental entities in civil or criminal investigations and proceedings by other entities. These claims could be asserted under a variety of laws, including but not limited to patent, trade secret and other intellectual property matters, product liability claims, employee claims, tort or contract claims, and federal regulatory investigations. These actions could expose us to adverse publicity and to substantial monetary damages and legal defense costs, injunctive relief and criminal and civil fines and penalties.

Product liability and other claims against us may reduce demand for our products or result in substantial damages

Our business exposes us to potential liability for risks that may arise from the clinical testing of our product candidates, the use of our products by physicians, and the manufacture and sale of any approved products. An individual may bring a product liability claim against us, including frivolous lawsuits, if one of our products causes, or merely appears to have caused, an injury.

We currently have product liability insurance for $6.0 million per occurrence with an annual aggregate maximum of $6.0 million.

We cannot assure, however, that product liability claims will not exceed our insurance coverage limits or that such insurance coverage limits will continue to be available on acceptable terms, or at all. Our insurers may also claim that certain claims are not within the scope of our product liability insurance. A product liability claim, recall, or other claim regarding uninsured liabilities or for amounts over insured liabilities could have a material adverse effect on our business, financial condition, results of operations and prospects. Any product liability claim or series of claims or class actions brought against us, with or without merit, could result in:

- liabilities that substantially exceed our insurance levels, which we would then be required to pay from other sources, if available;
- an increase in our product liability insurance rates or the inability to renew or obtain product liability insurance coverage in the future on acceptable terms, or at all;
- withdrawal of clinical study volunteers or subjects;
- damage to our reputation and the reputation of our products;
- regulatory investigations that could require costly recalls or product modifications;
- litigation costs; and
- diversion of our management’s attention from managing our business.

The misuse or off-label use of our products may harm our reputation in the marketplace, result in injuries that lead to product liability suits or result in costly investigations, fines or sanctions by regulatory bodies if we are deemed to have engaged in the promotion of these uses, any of which could be costly to our business

Any products that we market will be subject to the limitations on indicated uses as specified in their respective approvals or certifications. Uses outside of the approved or certified indications for use are known as "off-label uses." We cannot prevent a physician from using our products off-label, when, in the physician's independent professional medical judgment, he or she deems it appropriate. There may be increased risk of injury to patients if physicians attempt to use our products off-label. Furthermore, the use of our products for indications, other than those approved or certified by the FDA or by any foreign regulatory authority or notified body, may not effectively treat such conditions, which could harm our reputation in the marketplace among physicians and patients.

The FDA and other regulatory agencies strictly regulate the promotional claims that may be made about prescription products, such as our product candidates, if approved or certified. In particular, a product may not be promoted for off-label uses. If the FDA or any foreign regulatory body determines that our promotional materials or training constitute promotion of an off-label use, it could request that we modify our training or promotional materials or subject us to regulatory or enforcement actions, including the issuance or imposition of an untitled letter, which is used for violators that do not necessitate a warning letter, injunction, seizure, civil fine or criminal penalties. It is also possible that other federal, state or foreign enforcement authorities might take action under other regulatory authority, such as false claims laws, if they consider our business activities to constitute promotion of an off-label use, which could result in significant penalties, including, but not limited to, criminal, civil and administrative penalties, damages, fines, disgorgement, exclusion from participation in government healthcare programs and the curtailment of our operations.

In addition, physicians may misuse our products, or use improper techniques if they are not adequately trained, potentially leading to injury and an increased risk of product liability. If so, we may become subject to costly litigation by our customers or their patients. Product liability claims could divert management's attention from our core business, be expensive to defend and result in sizable damage awards against us that may not be covered by insurance.

Our information technology systems, or those of any of our CROs, manufacturers, other contractors, consultants, collaborators or potential future collaborators, may fail or suffer security or data privacy breaches or other unauthorized or improper access to, use of, or destruction of our proprietary or confidential data, employee data, or personal data, which could result in additional costs, loss of revenue, significant liabilities, harm to our brand and material disruption of our operations

Despite the implementation of security measures, our information technology systems and those of our current and any future CROs and other contractors, consultants, collaborators and third-party service providers, are vulnerable to attack and damage from computer viruses and malware (e.g., ransomware), malicious code, hacking, cyberattacks, phishing attacks and other social engineering schemes, cybersecurity threats, unauthorized access, natural disasters, terrorism, war, telecommunication and electrical failure, employee theft or misuse, human error, fraud, denial or degradation of service attacks, sophisticated nation-state and nation-state-supported actors or unauthorized access or use by persons inside our organization, or persons with access to systems inside our organization. Attacks upon information technology systems are increasing in their frequency, levels of persistence, sophistication and intensity, and are being conducted by sophisticated and organized groups and individuals with a wide range of motives and expertise. As a result of the COVID-19 pandemic, we may also face increased cybersecurity risks due to our reliance on internet technology and the number of our employees who are working remotely, which may create additional opportunities for cybercriminals to exploit vulnerabilities. Furthermore, because the techniques used to obtain unauthorized access to, or to sabotage, systems change frequently and often are not recognized until launched against a target, we may be unable to anticipate these techniques or implement adequate preventative measures. We may also experience security breaches that may remain undetected for an extended period. Even if identified, we may be unable to adequately investigate or remediate incidents or breaches due to attackers increasingly using tools and techniques that are designed to circumvent controls, to avoid detection, and to remove or obfuscate forensic evidence.

We and certain of our service providers are, from time to time, subject to cyberattacks and security incidents. While we do not believe that we have experienced any significant system failure, accident or security breach to date, if such an event were to occur and cause interruptions in our operations or result in the unauthorized acquisition of, or access to, personally identifiable information or individually identifiable health information, it could result in a material disruption of our development programs and our business operations, whether due to a loss of our trade secrets or other similar disruptions. Some of the federal, state and foreign government requirements include obligations of companies to notify individuals of security breaches involving particular personally identifiable information, which could result from breaches experienced by us or by our vendors, contractors or organizations with which we have formed strategic relationships. Notifications and follow-up actions related to a security breach could impact our reputation, cause us to incur significant costs, including legal expenses and remediation costs. For example, the loss of clinical study data from completed or future clinical studies could result in delays in our regulatory approval or certification efforts and significantly increase our costs to recover or reproduce the lost data. We also rely on third parties to manufacture our product candidates, and similar events relating to their computer systems could also have a material adverse effect on our business. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data, or inappropriate disclosure of confidential or proprietary information, we could be exposed to litigation and governmental investigations, the further development and commercialization of our product candidates could be delayed, and we could be subject to significant fines or penalties for any noncompliance with certain state, federal and/or international privacy and security laws.

Our insurance policies may not be adequate to compensate us for the potential losses arising from any such disruption, failure or security breach. In addition, such insurance may not be available to us in the future on economically reasonable terms, or at all. Further, our insurance may not cover all claims made against us and could have high deductibles in any event, and defending a suit, regardless of its merit, could be costly and divert management attention.

We must successfully maintain and upgrade our information technology systems, and our failure to do so could have a material adverse effect on our business, financial condition and results of operations

As we expand, in order to remain competitive, we will need to significantly expand and improve our information technology systems and personnel to support historical and expected future growth. As such, we will continue to invest in and implement, significant modifications and upgrades to our information technology systems and procedures, including replacing legacy systems with successor systems, making changes to legacy systems or acquiring new systems with new functionality, hiring employees with information technology expertise and building new policies, procedures, training programs and monitoring tools. These types of activities subject us to inherent costs and risks associated with replacing and changing these systems, fulfill customer orders, potential disruption of our internal control structure, substantial capital expenditures, additional administration and operating expenses, acquisition and retention of sufficiently skilled personnel to implement and operate the new systems, demands on management time and other risks and costs of delays or difficulties in transitioning to or integrating new systems into our current systems. These implementations, modifications and upgrades may not result in productivity improvements at a level that outweighs the costs of implementation, or at all. In addition, difficulties with implementing new technology systems, delays in our timeline for planned improvements, significant system failures, or our inability to successfully modify our information systems to respond to changes in our business needs may cause disruptions in our business operations and have a material adverse effect on our business, financial condition and results of operations.

Economic conditions may adversely affect our business, financial condition and share price

Adverse worldwide economic conditions may negatively impact our business. A significant change in the liquidity or financial condition of our customers could cause unfavorable trends in their purchases and/or in our receivable collections, and additional allowances may be required, which could adversely affect our business, financial condition and results of operations. Adverse worldwide economic conditions may also adversely impact our suppliers' ability to provide us with materials and components, which could have a material adverse effect on our business, financial condition and results of operations.

The global credit and financial markets have recently experienced extreme volatility and disruptions, including severely diminished liquidity and credit availability, declines in consumer confidence, inflation, declines in economic growth, wage inflation because of labor shortages and uncertainty about economic stability. The financial markets and the global economy may also be adversely affected by the current or anticipated impact of military conflict, including the conflict between Russia and Ukraine, terrorism or other geopolitical events. Sanctions imposed by the United States and other countries in response to such conflicts, including the one in Ukraine, may also adversely impact the financial markets and the global economy, and any economic countermeasures by affected countries and others could exacerbate market and economic instability. There can be no assurance that further deterioration in credit and financial markets and confidence in economic conditions will not occur. Our general business strategy may be adversely affected by any such economic downturn, volatile business environment or continued unpredictable and unstable market conditions. If the current equity and credit markets deteriorate, it may make any necessary debt or equity financing more difficult, more costly and more dilutive. These developments, or the perception that any of them could occur, may restrict the ability of key market participants to operate in certain financial markets or restrict our access to capital. For example, there is a risk that one or more of our current service providers, manufacturers and other partners may not survive an economic downturn, which could directly affect our ability to attain our operating goals on schedule and on budget. Any of these factors could have a material adverse effect on our business, financial condition and results of operations and reduce the price of our common stock.

Business disruptions could seriously harm our future revenue and financial condition and increase our costs and expenses

Our operations could be subject to power shortages, telecommunications failures, water shortages, floods, hurricanes, typhoons, fires, extreme weather conditions, health epidemics or pandemics or other contagious outbreaks, such as the recent COVID-19 pandemic, and other natural or man-made disasters or business interruptions, for which we are predominantly self-insured. We rely on third-party manufacturers to produce our products and/or components thereof. Our ability to obtain clinical supplies of our products and/or components thereof could be disrupted if the operations of these suppliers were affected by a man-made or natural disaster or other business interruption. The occurrence of any of these business disruptions could seriously harm our operations and financial condition and increase our costs and expenses.

Disruptions at the FDA, other government agencies and notified bodies caused by funding shortages or global health concerns could hinder their ability to hire, retain or deploy key leadership and other personnel, or otherwise prevent new or modified products from being developed, approved, certified or commercialized in a timely manner or at all, or otherwise prevent those agencies and bodies from performing normal business functions on which the operation of our business may rely, which could negatively impact our business

The ability of the FDA, other government agencies and notified bodies to review and approve or certify new products can be affected by a variety of factors, including government budget and funding levels, statutory, regulatory and policy changes, the FDA's or other government agencies' ability to hire and retain key personnel and accept the payment of user fees, and other events that may otherwise affect the FDA's, other government agencies' and notified bodies' ability to perform routine functions. Average review times at the FDA, other government agencies and notified bodies have fluctuated in recent years as a result. In addition, government funding of other government agencies that fund research and development activities is subject to the political process, which is inherently fluid and unpredictable. Disruptions at the FDA, other agencies and notified bodies may also slow the time necessary for new drugs and medical devices or modifications to approved drugs or approved or certified medical devices to be reviewed and/or approved or certified by necessary government agencies or notified bodies, which would adversely affect our business. For example, over the last several years, the U.S. government has shut down several times and certain regulatory agencies, such as the FDA, have had to furlough critical FDA employees and stop critical activities.

Separately, in response to the COVID-19 pandemic, in March 2020, the FDA began postponing most inspections of foreign manufacturing and domestic facilities. Subsequently, in July 2020, the FDA resumed certain on-site inspections of domestic manufacturing facilities subject to a risk-based prioritization system. The FDA utilized this risk-based assessment system to assist in determining when and where it was safest to conduct prioritized domestic inspections In May 2021, the FDA outlined a detailed plan to move toward a more consistent state of inspectional operations, and in July 2021, the FDA resumed standard inspectional operations of domestic facilities. Since that time, the FDA has continued to monitor and implement changes to its inspectional activities to ensure the safety of its employees and those of the firms it regulates as it adapts to the evolving COVID-19 pandemic. Regulatory authorities and notified bodies outside the United States have adopted similar restrictions or other policy measures in response to the COVID-19 pandemic or future pandemics. If a prolonged government shutdown occurs, or if global health concerns prevent the FDA, other regulatory authorities or notified bodies from conducting their regular inspections, audits, reviews, or other regulatory activities, it could significantly impact the ability of the FDA, other regulatory authorities or notified bodies to timely review and process our regulatory submissions, which could have a material adverse effect on our business.

In the European Union (the "EU"), notified bodies must be officially designated to certify products and services in accordance with the EU Medical Devices Regulation. Several notified bodies have been designated under the EU Medical Devices Regulation. However, the COVID-19 pandemic has significantly slowed down their designation process, and the current designated notified bodies are facing a large number of requests with the new regulation as a consequence of which review times may have lengthened. This situation may impact the ability of our notified body(ies) to timely review and process our regulatory submissions.

We, in conjunction with our partners, intend to expand sales of our products internationally in the future, but we and our partners may experience difficulties in obtaining regulatory approval or certification or in successfully marketing and distributing our products internationally even if approved or certified. A variety of risks associated with marketing and distributing our products internationally could materially adversely affect our business

Our future growth may depend, in part, on our and our partners' ability to develop and commercialize our planned and future products in foreign markets. Sales of our products outside of the United States are and will be subject to foreign regulatory requirements governing clinical studies and marketing approval or certification, as well as FDA regulation of the export of drugs and medical devices from the United States. To obtain separate regulatory approval or certification in many other countries we must comply with numerous and varying regulatory requirements regarding safety and efficacy and governing, among other things, clinical studies, commercial sales, pricing and distribution of our planned or future products. We and/or our partners will incur substantial expenses in connection with our expected international expansion. Additional risks related to operating in foreign countries include:

- differing reimbursement regimes in foreign countries, including price controls;
- unexpected changes in tariffs, trade barriers, price and exchange controls and other regulatory requirements;
- economic weakness, including inflation, or political instability in particular foreign economies and markets;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad;
- foreign taxes, including withholding of payroll taxes;
- unexpected changes in tariffs, trade barriers and regulatory requirements;
- foreign currency fluctuations, which could result in increased operating expenses, reduced revenue and other obligations incidental to doing business in another country;
- difficulties staffing and managing foreign operations;
- workforce uncertainty in countries where labor unrest is more common than in the United States;
- potential liability under the U.S. Foreign Corrupt Practices Act of 1977, as amended (the "FCPA"), or comparable foreign regulations;
- the existence of additional third-party patent rights of potential relevance to our business;
- economic weakness, including inflation or political instability in particular foreign economies and markets;
- challenges protecting and enforcing our contractual and intellectual property rights, especially in those foreign countries that do not respect and protect intellectual property rights to the same extent as the United States;
- product shortages resulting from any events affecting raw material or finished good supply or distribution or manufacturing capabilities abroad;
- compliance with tax, employment, immigration and labor laws for employees living or traveling abroad; and
- business interruptions resulting from geopolitical actions, including war and terrorism (including the ongoing invasion of Ukraine by Russia), natural disasters, including earthquakes, typhoons, floods and fires, or health epidemics or pandemics or other contagious outbreaks, such as the recent COVID-19 pandemic.

These and other risks associated with our international operations may materially adversely affect our ability to attain or maintain profitable operations, which would have a material adverse effect on our business, financial condition and results of operations.

In addition, there can be no guarantee that we will receive approval or certification to sell our product candidates in any international market we target, nor can there be any guarantee that any sales would result, even if such approval or certification is received. Even if the FDA grants marketing approval for a product candidate, comparable regulatory authorities or notified bodies of foreign countries must also approve or certify the manufacturing or marketing of the product candidate in those countries. Approval in the United States, or in any other jurisdiction, does not ensure approval or certification in other jurisdictions. Obtaining foreign approvals or certifications could result in significant delays, difficulties and costs for us and require additional trials and additional expenses. Regulatory requirements can vary widely from country to country and could delay the introduction of our products or product candidates in those countries. Marketing authorization by the FDA does not ensure registration, certification, clearance or approval by regulatory authorities or notified bodies in other countries, and registration, certification, clearance or approval by one or more foreign regulatory authorities or notified bodies does not ensure registration, clearance, certification or approval by regulatory authorities or notified bodies in other foreign countries or by the FDA. However, a failure or delay in obtaining registration or regulatory clearance, certification or approval in one country may have a negative effect on the regulatory process in others. Clinical studies conducted in one country may not be accepted by other countries. If we fail to comply with these regulatory requirements or to obtain and maintain required approvals or certifications, our target market will be reduced and our ability to generate revenue will be diminished. Our inability to successfully enter all our desired international markets and manage business on a global scale could negatively affect our business, financial results and results of operation.

We may in the future bring certain cGMP product release testing, stability testing and cGMP pharmaceutical manufacturing capabilities in-house, and we may not be able to do so successfully or in compliance with FDA regulations

We have brought certain activities that we previously outsourced to third parties, in-house, and we may bring certain additional activities in-house in the future. For example, we have brought certain cGMP product release testing related to SirolimusEFR in-house. In addition, we may eventually bring the manufacture of pharmaceutical drug products, such as SirolimusEFR, in-house. To the extent we do bring these functions in-house, we will be directly subject to FDA and other regulations with respect to these activities, such as the FDA's good laboratory practice requirements, cGMP regulations and similar foreign requirements. We cannot provide assurance that we will be able to perform these functions effectively or comply with applicable regulations if we bring these functions in-house.

We may expend our limited resources to pursue a particular product or indication and fail to capitalize on products or indications that may be more profitable or for which there is a greater likelihood of success

Because we have limited financial and managerial resources, we focus on specific products and product candidates, indications and discovery programs. As a result, we may forgo or delay pursuit of other opportunities with others that could have had greater commercial potential. Our resource allocation decisions may cause us to fail to capitalize on viable commercial products or profitable market opportunities. Our spending on current and future research and development programs for specific indications may not yield any commercially viable products. If we do not accurately anticipate physician and patient needs, as well as evaluate the commercial potential or target market for a particular potential product, we may miss valuable product development opportunities or we may relinquish valuable rights to that potential product through future collaborations, licenses and other similar arrangements in cases in which it would have been more advantageous for us to further advance development or to retain sole development and commercialization rights to such potential product.

Our ability to utilize our net operating loss carryforwards and certain other tax attributes may be limited

As of December 31, 2022, we had gross net operating loss ("NOL") carryforwards of approximately $108.6 million for federal income tax purposes, and $88.0 million for state income tax purposes, and approximately $3.1 million of federal research and development tax credits, after applying limitations under Section 382 and Section 383 of the Code. Utilization of these NOLs depends on many factors, including our future income, which cannot be assured. Some of these NOLs could expire unused and be unavailable to offset our future income tax liabilities. In addition, under Section 382 of the Code, and corresponding provisions of state law, if a corporation undergoes an "ownership change," which is generally defined as a greater than 50% change, by value, in its equity ownership by 5% stockholders over a three-year period, the corporation's ability to use its pre-change NOLs and other pre-change tax attributes to offset its post-change income may be limited. We have experienced Section 382 ownership changes in the past, and the federal NOL disclosed above reflects the impact of the calculated Section 382 limitation. In addition, we may experience additional ownership changes in the future as a result of subsequent changes in our stock ownership, some of which may be outside of our control. If we determine that an ownership change has occurred and our ability to use our historical NOLs is materially limited, it could harm our future operating results by effectively increasing our future tax obligations. In addition, under the Tax Cuts and Jobs Act of 2017 (the "Tax Act"), future tax losses may be utilized to offset no more than 80% of the taxable income annually. Under the Coronavirus Aid, Relief, and Economic Security Act (the "CARES Act"), signed into law in March 2020, the limitation on the deduction of NOLs to 80% of current year taxable income does not apply to taxable years beginning before January 1, 2021. Federal NOLs arising in taxable years beginning after December 31, 2017 and before January 1, 2021 are required to be carried back to each of the five taxable years preceding the tax year of such loss unless the taxpayer elects to waive or reduce such carryback period, but NOLs arising in taxable years beginning after December 31, 2020 generally may not be carried back. Notwithstanding the CARES Act, we may be required to pay federal income taxes in future years despite generating a loss for federal income tax purposes. There is also a risk that due to statutory or regulatory changes or other unforeseen reasons, our future NOLs could expire or otherwise be unavailable to offset future income tax liabilities. For these reasons, we may not be able to realize a tax benefit from the use of any future NOLs we generate, whether or not we attain profitability. As of December 31, 2022, we recorded a full valuation allowance on our deferred tax assets.

Changes in tax laws could adversely affect the taxes we pay and, as a result, adversely affect our financial condition and results of operations

Tax laws, regulations, and administrative practices may be subject to significant change, with or without notice, due to economic, political and/or other conditions, and significant judgment is required in applying the relevant provisions of tax law. If such changes were to be adopted or if the tax authorities were to challenge our application of relevant provisions of applicable tax laws, our financial condition and results of operations could be adversely affected.

In particular, the U.S. government may enact significant changes to the taxation of business entities including, among others, an increase in the corporate income tax rate, the imposition of minimum taxes or surtaxes on certain types of income, significant changes to the taxation of income derived from international operations, and an addition of further limitations on the deductibility of business interest. For example, the Inflation Reduction Act of 2022 enacted on August 16, 2022, among other provisions, imposes a 15% minimum tax on the adjusted financial statement income of certain large corporations, as well as a 1% excise tax on corporate stock repurchases by publicly traded companies. This act, as well as any other changes to tax laws that are enacted, could adversely affect our tax liability. While certain other draft legislation has been publicly released and is under development in Congress at this time, the likelihood of these changes being enacted or implemented is unclear. We are currently unable to predict whether such changes will occur. If such changes are enacted or implemented, we are currently unable to predict the ultimate impact on our business and therefore there can be no assurance our business will not be adversely affected.

Risks Related to Our Reliance on Third Parties

We are, and expect to continue to be, highly dependent on partners to drive the successful marketing and sale of our initial product candidates. There is no assurance that we will be able to form and properly manage partnerships. There is no assurance that partnerships will be successful

We intend to primarily pursue licensing and distribution arrangements with strategic partners to commercialize and sell our product candidates. As such, licensing and collaboration payments, including upfront and milestone payments, as well as royalties and revenue sharing arrangements related to our products and product candidates, will account for substantially all of our revenue for the foreseeable future. Any of these relationships may require us to incur non-recurring and other charges, increase our near and long-term expenditures, issue securities that dilute our existing stockholders or disrupt our management and business. In addition, we face significant competition in seeking appropriate strategic partners and the negotiation process is time-consuming and complex. We have limited experience in negotiating, establishing and managing such collaborations and we may be unable to successfully form and maintain such arrangements. Without commercialization partners, we may not have adequate financial or other resources to successfully commercialize our product candidates. In addition, any potential future collaborations may be terminable by our strategic partners, and we may not be able to adequately protect our rights under these agreements. Furthermore, strategic partners may negotiate for exclusive rights to commercialize our products or certain rights to control decisions regarding the development and commercialization of our products, if approved, and may not conduct those activities in the same manner as we do. Any termination of collaborations we have entered into or may enter into in the future, or any delay in entering into collaborations related to our products or product candidates, could delay the development and commercialization of our products or product candidates and reduce their competitiveness if they reach the market, which could have a material adverse effect on our business, financial condition and results of operations.

Successfully commercializing medical device combinations such as ours is a complex and uncertain process, dependent on the efforts of management, distributors, outside consultants, physicians and general economic conditions, among other factors. Any factors that adversely impact the commercialization of our product candidates will have a negative impact on our business, results of operations and financial condition. We cannot assure you that we or our partners will be successful in developing or commercializing any of our product candidates or any other new product candidates. Our inability to successfully commercialize our product candidates through partnerships and/or successfully develop and commercialize additional products or any enhancements to our products which we may develop would have a material adverse effect on our business, results of operations and financial condition.

We did not meet the target achievement dates relating to certain milestone payments, and we may not meet other target achievement dates relating to additional milestone payments, under our manufacturing and distribution agreement with Terumo, which may have an adverse effect on our relationship with Terumo and our results of operations

In June 2019, we entered into a strategic partnership with Terumo (the "Terumo Partnership") for the manufacture and distribution of our product Virtue SAB. Under the agreement with Terumo, we were initially eligible for certain milestone payments in the amount of $65 million from Terumo upon completion of certain minimum enrollments in clinical studies, making certain filings and submissions, and obtaining certain regulatory approvals and certifications. Of these milestone payments, $35 million relate to achieving certain milestones by specified target achievement dates, and, as of the date of this Quarterly Report on Form 10-Q, we have already passed the target achievement dates for two $5 million milestone payments, in each case, without achieving the related milestones. In addition, due to delays in our Virtue SAB program resulting from the COVID-19 pandemic, supply chain issues and unexpected regulatory delays and requirements, we are unlikely to be able to complete the remaining time-based milestones by the specified target achievement dates to earn the remaining $25 million in time-based milestone payments pursuant to our agreement with Terumo.

Further, Terumo has the right to terminate the agreement, or certain of its obligations thereunder, if certain milestones are not achieved. If Terumo elects to terminate the agreement, our development and commercialization plans for Virtue SAB could be adversely impacted, and this could have a material adverse effect on our business, financial condition, results of operations and prospects.

The Company and Terumo signed a letter agreement in June 2022 whereby the parties agreed to negotiate in good faith over 12 months mutually agreeable adjustments to certain target achievement dates to reflect the regulatory and pandemic-related delays. There is no assurance as to the outcome of these negotiations with respect to any potential modifications to the milestone target achievement dates. If we are unable to complete such milestone negotiations to our satisfaction or to the satisfaction of Terumo, our development and commercialization plans for Virtue SAB and/or our relationship with Terumo could be adversely impacted. In addition, our failure to earn milestone payments under our agreement with Terumo will have an adverse effect on our results of operations.

We expect to be highly dependent on partners and third-party vendors to manufacture and provide important materials and components for our products and product candidates. There is no assurance that we will be able properly manage our supply chain. Further, we currently do not have redundancy built into our supply chain

We utilize and intend to continue to utilize partners and third-party vendors to assist in the manufacture and assembly of our products and product candidates, as well as to provide materials and components essential to the manufacture of our products and product candidates, in particular Virtue SAB. For example, for our Virtue SAB product candidate, we currently source sirolimus from a single manufacturer in China and we source angioplasty balloons from a single manufacturer in Singapore. Disruptions in those countries or with respect to those suppliers for any reason, including, without limitation, further outbreaks of COVID-19, including any strains or variants of the virus, or any future pandemic, could cause us to seek new or additional suppliers for these products and could have a material adverse effect on our business.

We expect to continue to rely on third-party manufacturers for the commercial supply of any of our product candidates for which we obtain marketing approval, if any. We may be unable to maintain or establish required agreements with third-party manufacturers or to do so on acceptable terms. Even if we are able to establish agreements with third-party manufacturers, reliance on third-party manufacturers entails additional risks, including:

- the failure of the third party to manufacture our product candidates according to our schedule, or at all, including if our third-party contractors give greater priority to the supply of other products over our product candidates or *otherwise* do not satisfactorily perform according to the terms of the agreements between us and them;
- the reduction or termination of production or deliveries by suppliers, or the raising of prices or renegotiation of terms;
- the termination or nonrenewal of arrangements or agreements by our third-party contractors at a time that is costly or inconvenient for us;
- the breach by the third-party contractors of our agreements with them;
- the failure of third-party contractors to comply with applicable regulatory requirements;
- the failure of the third party to manufacture our product candidates according to our specifications;
- the mislabeling of clinical supplies, potentially resulting in the wrong dose amounts being supplied or active drug or placebo not being properly identified;
- clinical supplies not being delivered to clinical sites on time, leading to clinical study interruptions, or of drug or medical device supplies not being distributed to commercial vendors in a timely manner, resulting in lost sales; and
- the misappropriation of our proprietary information, including our trade secrets and know-how.

In addition, successfully manufacturing a medical device combination product or product candidate such as our Virtue SAB is a complex and uncertain process, dependent on the efforts of management, suppliers, manufacturing companies, packaging vendors, testing companies, outside consultants and general economic conditions, among other factors. Our ability to supply our products commercially and to develop any future products depends, in part, on our ability to obtain these materials, components and products in accordance with regulatory requirements and in sufficient quantities for commercialization and clinical testing. Any factors that adversely impact the manufacturing of our products or product candidates will have a negative impact on our business, results of operations and financial condition. We cannot assure you that we or our partners will be successful in manufacturing our current products or product candidates or any potential enhancements to our products or any other new products. Our inability to successfully manufacture our products through partnerships and/or successfully develop and manufacture additional products or any enhancements to our products which we may develop would have a material adverse effect on our business, results of operations and financial condition.

We and our partners may be unable to sustain revenue growth

We expect our ability to increase our revenue in future periods to primarily depend on the ability of commercial partners to successfully penetrate our target markets and increase sales of our products or product candidates, which will, in turn, depend in part on our partners' success in growing their customer base and obtaining reorders from those customers. New products will also need to be developed and approved, or certified or otherwise authorized by the FDA and foreign regulatory agencies or notified bodies to sustain revenue growth in our markets. Additional clinical data and new products may be necessary to grow revenue.

The failure of our manufacturing partners and component suppliers to meet regulatory quality standards applicable to their manufacturing processes could have an adverse effect on our business, financial condition and results of operations

Our medical device and component manufacturers must register with the FDA and are subject to periodic inspection by the FDA for compliance with the FDA's Quality System Regulation ("QSR"), requirements, which require manufacturers of medical devices to adhere to certain manufacturing practices, including design controls, product validation and verification, in process testing, quality control and documentation procedures. Similar requirements apply in foreign jurisdictions. Compliance with applicable regulatory requirements is subject to continual review and is rigorously monitored through periodic inspections or audits by the FDA and other regulatory agencies or notified bodies. Our component, polymer and drug suppliers are also required to meet certain standards applicable to their manufacturing processes.

We cannot assure you that we, our manufacturing partners, or component suppliers comply or can continue to comply with all regulatory requirements. The inability of one of these parties to achieve or maintain compliance with these requirements or quality standards may disrupt our ability to supply products sufficient to meet demand until compliance is achieved, or until a new supplier or manufacturer has been identified and evaluated. Our or these parties' failure to comply with applicable regulations could cause sanctions to be imposed on us, including warning letters, fines, injunctions, civil penalties, failure of regulatory authorities to grant marketing approval of our product candidates, delays, suspension or withdrawal of approvals, certifications, license revocation, seizures or recalls of products or product candidates, operating restrictions and criminal prosecutions, which could harm our business. We cannot assure you that if we need to engage new suppliers, manufacturers or testing resources to satisfy our business requirements that we can locate new ones in compliance with regulatory requirements. Our failure to do so could have a material adverse effect on our business, financial condition, results of operations and prospects.

From time to time, we engage outside parties to perform services related to certain of our clinical studies and trials, and any failure of those parties to fulfill their obligations could cause costs and delays

From time to time, we engage consultants and CROs to help design, monitor and analyze the results of certain of our clinical studies and trials. The consultants and CROs we engage interact with clinical investigators to enroll patients in our clinical studies. We depend on these consultants, CROs and clinical investigators to perform the clinical studies and trials and monitor and analyze data from these studies and trials under the investigational plan and protocol for the study or trial and in compliance with regulations and requirements, commonly referred to as GCP, for conducting, recording and reporting results of clinical studies or trials to assure that the data and results are credible and accurate and the trial participants are adequately protected, as required by the FDA and foreign regulatory authorities. The consultants and CROs also are responsible for protecting confidential patient data and complying with U.S. and foreign laws and regulations related to data privacy. We may face delays in our regulatory approval process if these parties do not perform their obligations in a timely or competent fashion or if we must change service providers. This risk is greater for our clinical studies and trials conducted outside of the United States, where it may be more difficult to ensure our studies and trials are conducted in compliance with FDA requirements. Any third parties we hire to design or monitor and analyze results of our clinical studies and trials may also provide services to our competitors, which could compromise the performance of their obligations to us. If these third parties do not successfully carry out their duties or meet expected deadlines, or if the quality, completeness or accuracy of the data they obtain is compromised due to the failure to adhere to our clinical study protocols or for other reasons, our clinical studies or trials may be extended, delayed or terminated or may otherwise prove to be unsuccessful, and our development costs will increase. We may not establish or maintain relationships with these third parties on favorable terms, or at all. If we need to enter into replacement arrangements because a third-party is not performing in accordance with our expectations, we may not be able to do so without undue delays or considerable expenditures, or at all.

The FDA and similar regulatory bodies may hold us responsible for any failure of our third-party consultants or CROs. Our monitoring of our third-party consultants or CROs may fail to detect, remedy or report their failures.

The continuing development of many of our products and product candidates depends upon our maintaining strong working relationships with physicians

The research, development, marketing and sale of many of our new and improved products or product candidates depend upon our maintaining working relationships with physicians. We rely on these professionals to provide us with considerable knowledge and experience regarding the development, marketing and sale of our products or product candidates. Physicians assist us as researchers, marketing and product consultants, inventors and public speakers. If we cannot maintain our strong working relationships with these professionals and continue to receive their advice and input, the development and marketing of our products or product candidates could suffer, which could have a material adverse effect on our business, financial condition, results of operations and prospects. At the same time, the medical device industry's relationship with physicians is under increasing scrutiny by the Office of Inspector General (the "OIG"), and the U.S. Department of Justice (the "DOJ"). Our failure to comply with requirements governing the industry's relationships with physicians, including the reporting of certain payments to physicians under the National Physician Payment Transparency Program or an investigation into our compliance by the OIG or the DOJ, could have a material adverse effect on our business, financial condition, results of operations and prospects.

We have limited pharmaceutical manufacturing experience and our CMOs may experience development or manufacturing problems or delays in producing our products and planned or future products that could limit or prevent the potential growth of our revenue or increase our losses

We are responsible for the manufacture of the proprietary SirolimusEFR used in our Virtue SAB product candidate. We have already experienced substantial delays and other challenges in the manufacture of SirolimusEFR as a result of supply chain and personnel issues experienced by the single source CMO that produces SirolimusEFR for us. Many of the processes, ingredients and components required for manufacture of SirolimusEFR are also required for manufacture of COVID-19 vaccines and tests and, as such, supply chains continue to be adversely impacted. Further, the manufacture of SirolimusEFR involves certain novel processes that we continue to develop to achieve consistent reproducibility as well as increase scale to support large clinical studies and future commercialization. In the event that we do not have sufficient SirolimusEFR, our planned clinical studies could be prevented or delayed. Further delays in our trial timelines will result in additional expenses to us and potentially risk or damage our partnership with Terumo and the future competitiveness of our Virtue SAB solution.

If approved for use in connection with our medical device product candidates or as a stand-alone product, we currently expect to remain responsible for the manufacture and supply of SirolimusEFR at clinical and/or commercial scale for our partner, Terumo. We have limited experience in manufacturing pharmaceutical products and no experience manufacturing SirolimusEFR in the volume that we anticipate will be required if we achieve planned levels needed for clinical studies and/or commercial sales. We do not currently have, nor do we currently have plans to acquire, the infrastructure or capability internally to manufacture or test SirolimusEFR on a clinical and/or commercial scale. Instead, we rely on contract manufacturers for current production of SirolimusEFR for clinical study supplies and currently plan to continue to use contract manufacturers for supply and testing. Our reliance on third-party suppliers and manufacturers, including certain single-source suppliers, could harm our ability to fulfill our supply obligations to Terumo. If our third-party suppliers fail to deliver the required quantities of materials on a timely basis and at reasonable prices, and we are unable to find one or more replacement suppliers capable of production at a substantially equivalent cost in substantially equivalent volumes and quality on a timely basis, the supply of our products or product candidates to customers and the development of any future products will be delayed, limited or prevented, which could have material adverse effect on our business, financial condition and results of operations.

The facilities used by our CMOs to manufacture our product candidates must be authorized by the applicable regulatory authorities, including the FDA, pursuant to inspections that will be conducted after a PMA, New Drug Application (“NDA”) or comparable foreign regulatory marketing application is submitted. We do not control the manufacturing process of our product candidates and are completely dependent on our contract manufacturing partners for compliance with the FDA’s cGMP or similar foreign requirements for manufacture of both the active drug substances and finished drug product. If our contract manufacturers cannot successfully manufacture material that conforms to our specifications and the FDA’s or foreign regulatory authorities’ strict regulatory requirements, they will not be able to secure or maintain FDA or foreign approval for use of their manufacturing facilities with respect to our product candidates. In addition, we have no control over the ability of our contract manufacturers to maintain adequate quality control, quality assurance and qualified personnel. If the FDA or any other applicable regulatory authority does not approve these facilities for the manufacture of our product candidates or if it withdraws any such approval in the future, or if our suppliers or contract manufacturers decide they no longer want to supply or manufacture for us, we may need to find alternative manufacturing facilities, in which case we might not be able to identify manufacturers for clinical or commercial supply on acceptable terms, without delay, or at all, which would significantly impact our ability to fulfill our supply obligations for SirolimusEFR for Virtue SAB, as well as sales of SirolimusEFR for other potential clinical applications.

In addition, the manufacture of pharmaceutical products is complex and requires significant expertise and capital investment, including the development of advanced manufacturing techniques and process controls. Manufacturers of pharmaceutical products often encounter difficulties in production, particularly in scaling up and validating initial production and absence of contamination. They may also encounter equipment breakdowns requiring lengthy repairs or the need to replace equipment. These problems include difficulties with production costs and yields, quality control, including stability of the product, quality assurance testing, operator error, shortages of qualified personnel, as well as compliance with strictly enforced federal, state and foreign regulations. Furthermore, if contaminants are discovered in our supply or in the manufacturing facilities, such manufacturing facilities may need to be closed for an extended period of time to investigate and remedy the contamination and could require that affected supplies be withdrawn or withheld from the market. Any stability or other issues relating to the manufacture of our product candidates may occur in the future. Additionally, our manufacturers may experience manufacturing difficulties due to resource constraints or as a result of labor disputes or unstable political environments. If our manufacturers were to encounter any of these difficulties, or otherwise fail to comply with their contractual obligations, our ability to provide SirolimusEFR to Terumo would be jeopardized, which would result in a material adverse effect on our business, financial condition, results of operations and prospects.

Reduction or interruption in supply and an inability to develop alternative sources for supply may adversely affect our partners' manufacturing operations and related product sales

We purchase many of the components and raw materials used in manufacturing our products from numerous suppliers in various countries. Generally, we have been able to obtain adequate supplies of such raw materials and components. However, for reasons of quality assurance, cost-effectiveness or availability, we may procure certain components and raw materials from a sole supplier. For example, for our Virtue SAB product candidate, we source sirolimus from a single manufacturer in China, we source angioplasty balloons from a single manufacturer based in Ireland that uses a production facility based in Singapore to manufacture balloons for us, and we source custom polymers from a single manufacturer in the United States. We work closely with our suppliers to try to ensure continuity of supply while maintaining high quality and reliability. However, we cannot guarantee that these efforts will be successful. In addition, due to the stringent regulations and requirements of the FDA, comparable regulatory bodies in countries in the EU and similar regulatory bodies elsewhere around the world regarding the manufacture of our products or product candidates, we may not be able to quickly establish additional or replacement sources for certain components or materials. A reduction in or an interruption to supply, and an inability to develop alternative sources for such supply, could adversely affect our ability to manufacture our products in a timely or cost-effective manner and to make our related product sales. Manufacturing facilities used to make our balloons or other components may be shut down, sold or otherwise become unavailable and it will take time and money for us to identify and requalify new facilities.

In addition, assuming our BackBeat CNT product candidate is approved, we will be reliant on Medtronic and its ability to obtain supplies for and to produce its BackBeat CNT-enabled pacemaker systems. If Medtronic is unable or unwilling to obtain such supplies or is otherwise unable or unwilling to produce its BackBeat CNT-enabled pacemaker systems, it could adversely affect our results of operations.

We source certain products from foreign suppliers, making us vulnerable to supply problems or price fluctuations caused by trade conflicts and other geopolitical events

Geopolitical risks and other global events could negatively affect our ability to rely on foreign suppliers. Ongoing uncertainty in the trade relationship between China and the United States could cause delays in the manufacturing supply chain for sirolimus, which we currently source from China. Likewise, export restrictions enacted in foreign countries as a result of the COVID-19 pandemic or any future pandemic, including those imposed in China, could limit our ability to obtain products from foreign suppliers or make foreign-made products more costly than anticipated. Any disruptions or delays in our supply chain could negatively impact our ability to operate our business or increase our costs. Further, any tariffs imposed on products we or our partners import from China, Singapore or any other foreign supplier, as a result of global trade conflict, could cause us to increase prices for our future products or reduce our margins.

In February 2022, following Russia's invasion of Ukraine, the United States and the EU imposed various economic sanctions against Russia. If Russia responds with retaliatory measures such as restrictions on the sale of oil or other energy resources from Russia to other countries in the region, that could result in an increase in our global shipping expenses, reduce our sales or otherwise have an adverse effect on our European operations. Additionally, escalation by Russia beyond Ukraine and into other countries within the region could also reduce our sales and have a negative effect on our European operations.

Risks Related to Government Regulation and Our Industry

Healthcare reform initiatives and other administrative and legislative proposals may adversely affect our business

There have been, and continue to be, proposals by the federal government, state governments, regulators and third-party payors to control or manage the increased costs of healthcare and, more generally, to reform the U.S. healthcare system. Certain of these proposals could limit the prices we are able to charge for our products or the coverage and reimbursement available for our products and could limit the acceptance and availability of our products. The adoption of proposals to control prices could have a material adverse effect on our business, financial condition, results of operations and prospects.

In the United States, there have been, and continue to be a, number of legislative initiatives to contain healthcare costs. For example, in March 2010, the Affordable Care Act (the "ACA") was enacted in the United States, which made a number of substantial changes in the way healthcare is financed by both governmental and private insurers. Among other ways in which it may affect our business, the ACA established a new Patient-Centered Outcomes Research Institute to oversee and identify priorities in comparative clinical effectiveness research in an effort to coordinate and develop such research, implemented payment system reforms including a national pilot program on payment bundling to encourage hospitals, physicians and other healthcare providers to improve the coordination, quality and efficiency of certain healthcare services through bundled payment models, and expanded the eligibility criteria for Medicaid programs.

Since its enactment, there have been judicial, U.S. Congressional and executive branch challenges to certain aspects of the ACA. On June 17, 2021, the U.S. Supreme Court dismissed the most recent judicial challenge to the ACA brought by several states without specifically ruling on the constitutionality of the ACA. Prior to the Supreme Court's decision, President Biden issued an executive order to initiate a special enrollment period from February 15, 2021 through August 15, 2021 for purposes of obtaining health insurance coverage through the ACA marketplace. The executive order also instructed certain governmental agencies to review and reconsider their existing policies and rules that limit access to healthcare, including among others, reexamining Medicaid demonstration projects and waiver programs that include work requirements, and policies that create unnecessary barriers to obtaining access to health insurance coverage through Medicaid or the ACA. It is unclear how other healthcare reform measures of the Biden administration or other efforts, if any, will impact our business.

In addition, other legislative changes have been proposed and adopted since the ACA was enacted. On August 2, 2011, the Budget Control Act of 2011 was signed into law, which, among other things, reduced Medicare payments to providers, effective on April 1, 2013 and, due to subsequent legislative amendments to the statute, will remain in effect through 2031, with the exception of a temporary suspension from May 1, 2020 through March 31, 2022, unless additional Congressional action is taken. On January 2, 2013, the American Taxpayer Relief Act of 2012 was signed into law, which, among other things, reduced Medicare payments to several providers, including hospitals, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. The Medicare Access and CHIP Reauthorization Act of 2015 (the "MACRA"), enacted on April 16, 2015, repealed the formula by which Medicare made annual payment adjustments to physicians and implemented fixed annual updates and a new system of incentive payments that began in 2019 that are based on various performance measures and physicians' participation in alternative payment models such as accountable care organizations. It is unclear what effect new quality and payment programs, such as MACRA, may have on our business, financial condition, results of operations or cash flows.

In addition to continuing pressure on prices and cost-containment measures in the United States, legislative developments at the EU or member state level may result in significant additional requirements or obstacles. The delivery of healthcare in the EU, including the establishment and operation of health services and the pricing and reimbursement of medicines, is almost exclusively a matter for national, rather than EU, law and policy. National governments and health service providers have different priorities and approaches to the delivery of healthcare and the pricing and reimbursement of products in that context. In general, however, the healthcare budgetary constraints in most EU member states have resulted in restrictions on the pricing and reimbursement of medicines by relevant health service providers. Coupled with ever-increasing EU and national regulatory burdens on those wishing to develop and market products, this could restrict or regulate post-approval activities and affect the ability of pharmaceutical companies to commercialize their products. In international markets, reimbursement and healthcare payment systems vary significantly by country, and many countries have instituted price ceilings on specific products and therapies.

We expect additional state, federal and foreign healthcare policies and reform measures to be adopted in the future, any of which could limit reimbursement for healthcare products and services or otherwise result in reduced demand for our products or other products we may commercialize in the future or additional pricing pressure and have a material adverse effect on our industry generally and on our customers. Any changes in, or uncertainty with respect to, future coverage or reimbursement rates could affect demand for our products or other products we may commercialize in the future, which, in turn, could impact our ability to successfully commercialize our products or other products we may commercialize in the future and could have a material adverse effect on our business, financial condition and results of operations.

For instance, in December 2021, the EU Regulation No 2021/2282 on Health Technology Assessment (the “HTA”), amending Directive 2011/24/EU, was adopted. This regulation, which entered into force in January 2022, intends to boost cooperation among EU member states in assessing health technologies, including some medical devices, and providing the basis for cooperation at the EU level for joint clinical assessments in these areas. The regulation foresees a three-year transitional period and will permit EU member states to use common HTA tools, methodologies, and procedures across the EU, working together in four main areas, including joint clinical assessment of the innovative health technologies with the most potential impact for patients, joint scientific consultations whereby developers can seek advice from HTA authorities, identification of emerging health technologies to identify promising technologies early, and continuing voluntary cooperation in other areas. Individual EU member states will continue to be responsible for assessing non-clinical (e.g., economic, social, ethical) aspects of health technologies, and making decisions on pricing and reimbursement.

Regulatory compliance is expensive, complex and uncertain, and approvals or certifications can often be denied or significantly delayed. We may not obtain the necessary approvals or certifications and failure to obtain timely regulatory approval or certification, if at all, would adversely affect our business

We are not permitted to commercialize, market, promote or sell any of our product candidates in the United States without obtaining approval from the FDA. Foreign regulatory authorities impose similar requirements. The time required to obtain approval or certification by the FDA, comparable foreign regulatory authorities and notified bodies is unpredictable, typically takes many years following the commencement of clinical studies and depends upon numerous factors, including the type, complexity and novelty of the product candidates involved. In addition, approval policies, regulations or the type and amount of clinical data necessary to gain approval may change during the course of a product candidate’s clinical development and may vary among jurisdictions, which may cause delays in the approval, certification or the decision not to approve an application. Regulatory authorities and notified bodies have substantial discretion in the approval or certification process and may refuse to accept any application or may decide that our data are insufficient for approval or certification and require additional preclinical, clinical or other studies. We have not submitted for or obtained marketing approval for any product candidate, except for CE mark certification of our first-generation BackBeat CNT on the Moderato implantable pulse generator (IPG) device.

In the United States, before we can market a new medical device, or a new use of, new claim for or significant modification to an existing device, we must first receive either clearance under Section 510(k) of the Federal Food, Drug, and Cosmetic Act (the "FDCA"), or approval of a PMA application from the FDA, unless an exemption applies. Under the FDCA, medical devices are classified into one of three classes, Class I, Class II or Class III, depending on the degree of risk associated with each medical device and the extent of manufacturer and regulatory control needed to ensure its safety and effectiveness. Certain Class I and Class II devices are exempt from premarket notification (510(k)) requirements as well as the Medical Device cGMPs, also referred to as the QSR. A Class I or Class II device that is exempt from 510(k) requirements must still comply with other requirements unless the device is explicitly exempt from those requirements as indicated in the regulation for that device type. We do not believe Virtue SAB or BackBeat CNT or other of our current product candidates will be exempt from, or eligible for, clearance under Section 510(k) of the FDCA. We expect our product candidates will require submission and FDA approval of a PMA to be marketed in the United States. In the process of obtaining PMA approval, the FDA must determine that a proposed device is safe and effective for its intended use(s) based, in part, on extensive data, including, but not limited to, technical, preclinical, clinical study, manufacturing and labeling data. The PMA process is typically required for devices that are deemed to pose the greatest risk, such as life-sustaining, life-supporting or implantable devices. Modifications to products that are approved through a PMA application generally require FDA approval. The PMA process can be expensive, lengthy and uncertain. The process of obtaining a PMA is much more costly and uncertain than the 510(k) clearance process and generally takes from one to three years, or even longer, from the time the application is submitted to the FDA.

In the United States, before we can market a new drug product, or market an approved drug for a new indication, we must receive approval of an NDA. In the process of obtaining NDA approval, the FDA must determine that the drug product candidate is safe and effective for its intended uses. The NDA is a comprehensive, multivolume application that includes, among other things, the results of preclinical and clinical studies, information about the drug's composition, and plans for manufacturing, packaging and labeling the drug. The time required to obtain NDA approval by the FDA is unpredictable and typically takes many years following the commencement of clinical studies.

We expect that obtaining regulatory approvals for our product candidates will require us to conduct human clinical studies. For our medical device product candidates and combination drug/device product candidates regulated as medical devices, we will need to obtain approval of an investigational device exemption ("IDE"), prior to beginning a clinical study in the United States. For our drug product candidates, we will need to submit an IND that the FDA authorizes prior to beginning clinical studies in the United States. Preclinical studies, submissions related to chemistry, manufacturing and controls ("CMC") of our product candidates, and safety data such as biocompatibility will be required in connection with any IDE or IND applications. It is possible that unforeseen failure of one or more of these tests could cause delays in the application process.

Despite the time, effort and cost involved in conducting clinical studies and seeking regulatory approvals or certifications, a product candidate may not be approved or certified by the FDA or comparable regulatory authorities or notified bodies. Any delay or failure to obtain necessary regulatory approvals or certifications could harm our business. Furthermore, even if we are granted regulatory approvals or certifications, they may include significant limitations on the indicated uses for the device, which may limit the market for the product.

The FDA, comparable regulatory authorities (or notified bodies) can delay, limit or deny approval of a drug or approval or certification of a medical device for many reasons, including:

- our inability to demonstrate to the satisfaction of the FDA or the applicable regulatory entity or notified body that our products are safe or effective for their intended uses;
- inability to satisfy regulators on the biocompatibility of our novel materials or to gain agreement with regulators on the methods or results of biocompatibility testing;
- the disagreement of the FDA or the applicable foreign regulatory authority or notified body with the design or implementation of our clinical studies or the interpretation of data from preclinical studies or clinical studies;
- serious and unexpected adverse effects experienced by participants in our clinical studies;
- the data from our preclinical studies and clinical studies may be insufficient to support approval;
- our inability to demonstrate that the clinical and other benefits of the product candidate outweigh the risks;
- the quality systems, manufacturing processes and/or facilities we use may not meet applicable requirements; and
- the potential for approval policies or regulations of the FDA or applicable foreign regulatory bodies to change significantly in a manner rendering our clinical data or regulatory filings insufficient for approval or certification.

The regulations to which we are subject are complex and have tended to become more stringent over time. Regulatory changes could result in restrictions on our ability to carry on or expand our operations, higher than anticipated costs or lower than anticipated sales. The FDA and foreign regulatory authorities enforce these regulatory requirements through various mechanisms, including periodic unannounced inspections. We do not know whether we or any CMOs we may utilize will pass any future FDA, foreign regulatory authorities or notified bodies inspections or audits. Failure to comply with applicable regulations could jeopardize our ability to sell our products and result in enforcement actions such as: warning letters; fines; injunctions; civil penalties; termination of distribution; recalls or seizures of products; delays in the introduction of products into the market; total or partial suspension of production; refusal to grant future approvals or certifications; withdrawals or suspensions of current approvals or certifications, resulting in prohibitions on sales of our products; and, in the most serious cases, criminal penalties.

Subject to the transitional provisions provided in the EU Medical Devices Regulation, and in order to sell our products in EU member states, our products must comply with the general safety and performance requirements of the EU Medical Devices Regulation, which repeals and replaces the Medical Devices Directive and the Active Implantable Medical Devices Directive. Compliance with these requirements is a prerequisite to be able to affix the European Conformity ("CE") mark to our products, without which they cannot be sold or marketed in the EU. All medical devices (including active implantable medical devices) placed on the market in the EU must meet the general safety and performance requirements laid down in Annex I to the EU Medical Devices Regulation, including the requirement that a medical device must be designed and manufactured in such a way that, during normal conditions of use, it is suitable for its intended purpose. Medical devices must be safe and effective and must not compromise the clinical condition or safety of patients, or the safety and health of users and — where applicable — other persons, provided that any risks which may be associated with their use constitute acceptable risks when weighed against the benefits to the patient and are compatible with a high level of protection of health and safety, taking into account the generally acknowledged state of the art. To demonstrate compliance with the general safety and performance requirements, we must undergo a conformity assessment procedure, which varies according to the type of medical device and its (risk) classification. A conformity assessment procedure generally requires the intervention of a notified body. The notified body would typically audit and examine the technical file and the quality system for the manufacture, design and final inspection of our devices. If satisfied that the relevant product conforms to the relevant general safety and performance requirements, the notified body issues a certificate of conformity, which the manufacturer uses as a basis for its own declaration of conformity. The manufacturer may then apply the CE mark to the device, which allows the device to be placed on the market throughout the EU. If we fail to comply with applicable laws and regulations, we would be unable to affix the CE mark to our products, which would prevent us from selling them within the EU.

The aforementioned EU rules are generally applicable in the European Economic Area (the "EEA") (which consists of the 27 EU member states plus Norway, Liechtenstein and Iceland). Non-compliance with the above requirements would also prevent us from selling our products in these three countries.

International regulatory approval or certification processes may take longer than the FDA approval process. If we fail to comply with applicable FDA and foreign regulatory requirements, we may not receive regulatory approvals or certifications or may be subject to FDA or foreign enforcement actions. We may be unable to obtain future regulatory approval or certification in a timely manner, or at all, especially if existing regulations are changed or new regulations are adopted. A failure or delay in obtaining necessary regulatory approvals or certifications would materially adversely affect our business.

In the EU, we must inform the notified body that carried out the conformity assessment of the medical devices that we market or sell in the EU and the EEA of any planned substantial changes to our quality system or substantial changes to our medical devices that could affect compliance with the general safety and performance requirements laid down in Annex I to the EU Medical Devices Regulation or cause a substantial change to the intended use for which the device has been CE marked. The notified body will then assess the planned changes and verify whether they affect the products' ongoing conformity with the EU Medical Devices Regulation. If the assessment is favorable, the notified body will issue a new certificate of conformity or an addendum to the existing certificate attesting compliance with the general safety and performance requirements and quality system requirements laid down in the Annexes to the EU Medical Devices Regulation. The notified body may disagree with our proposed changes and product introductions or modifications could be delayed or canceled, which could adversely affect our ability to grow our business.

Our medical device products must be manufactured in accordance with federal, state and foreign regulations, and we or any of our suppliers or third-party manufacturers could be forced to recall our installed systems or terminate production if we fail to comply with these regulations

The methods used in, and the facilities used for, the manufacture of our medical device products must comply with the FDA's QSR which is a complex regulatory scheme that covers the procedures and documentation of the design, testing, production, process controls, quality assurance, labeling, packaging, handling, storage, distribution, installation, servicing and shipping of medical devices. Furthermore, we are required to verify that our suppliers maintain facilities, procedures and operations that comply with our quality standards and applicable regulatory requirements. The FDA enforces the QSR through periodic announced or unannounced inspections of medical device manufacturing facilities, which may include the facilities of subcontractors. Our products are also subject to similar state regulations and various laws and regulations of foreign countries governing manufacturing. Our third-party manufacturers may not take the necessary steps to comply with applicable regulations, which could cause delays in the delivery of our products. In addition, failure to comply with applicable FDA or foreign regulatory requirements or later discovery of previously unknown problems with our products or manufacturing processes could result in, among other things: warning letters or untitled letters; fines, injunctions or civil penalties; suspension or withdrawal of approvals; seizures or recalls of our products; total or partial suspension of production or distribution; administrative or judicially imposed sanctions; the FDA's, foreign regulatory authorities' or notified bodies' refusal to grant pending or future approvals or certifications for our product candidates; clinical holds; refusal to permit the import or export of our product candidates; and criminal prosecution of us or our employees.

Any of these actions could significantly and negatively affect supply of our products. If any of these events occurs, our reputation could be harmed, we could be exposed to product liability claims and we could lose customers and experience reduced sales and increased costs.

Even if we obtain regulatory approval or certification for a product candidate, our products will remain subject to regulatory scrutiny and post-marketing requirements. Failure to comply with post-marketing regulatory requirements could subject us to enforcement actions, including substantial penalties, and might require us to recall or withdraw a product from the market

Any regulatory approvals or certifications that we may receive for our product candidates will require the submission of reports to regulatory authorities and surveillance to monitor the safety and efficacy of the product candidate, may contain significant limitations related to use restrictions for specified age groups, warnings, precautions or contraindications, and may include burdensome post-approval study or risk management requirements. For example, the FDA may require a REMS in order to approve our drug product candidates, which could entail requirements for a medication guide, physician training and communication plans or additional elements to ensure safe use, such as restricted distribution methods, patient registries and other risk minimization tools. In addition, if one of our product candidates is approved or certified, it will be subject to ongoing and pervasive regulatory requirements governing, among other things, the manufacture, marketing, labeling, advertising, adverse event reporting, recordkeeping, sale, promotion, sampling, testing, conduct of post-marketing studies, registration, and listing of drugs and medical devices. For example, we must submit periodic reports to the FDA as a condition of approval. These reports include safety and effectiveness information about the drug or device after its approval. Failure to submit such reports, or failure to submit the reports in a timely manner, could result in enforcement action by the FDA. Following its review of the periodic reports, the FDA might ask for additional information or initiate further investigation.

The regulations to which we are subject are complex and have become more stringent over time. Regulatory changes could result in restrictions on our ability to continue or expand our operations, higher than anticipated costs or lower than anticipated sales. Even after we have obtained the proper regulatory approval or certification to market a device, we have ongoing responsibilities under FDA regulations and applicable foreign laws and regulations. The FDA, state and foreign regulatory authorities have broad enforcement powers. Our failure to comply with applicable regulatory requirements could result in enforcement action by the FDA, state or foreign regulatory authorities, which may include any of the following sanctions:

- untitled letters or warning letters;
- fines, injunctions, consent decrees and civil penalties;
- recalls, termination of distribution, administrative detention or seizure of our products;
- customer notifications or repair, replacement or refunds;
- operating restrictions or partial suspension or total shutdown of production;
- delays in or refusal to grant our requests for future PMA approvals or foreign regulatory approvals or certifications of new products, new intended uses or modifications to existing products;
- withdrawals or suspensions of our current PMA or foreign regulatory approvals or certifications, resulting in prohibitions on sales of our products;
- FDA refusal to issue certificates to foreign governments needed to export products for sale in other countries; and
- criminal prosecution.

Any government investigation of alleged violations of law could require us to expend significant time and resources in response and could generate negative publicity. Any failure to comply with ongoing regulatory requirements may adversely affect our ability to commercialize and generate revenue from our products. If regulatory sanctions are applied or if regulatory approval or certification is withdrawn, our business will be seriously harmed.

Moreover, the policies of the FDA and of other regulatory authorities may change, and additional government regulations may be enacted that could prevent, limit or delay regulatory approval or certification of our product candidates. We cannot predict the likelihood, nature or extent of government regulation that may arise from future legislation or administrative or executive action, either in the United States or abroad. If we are slow or unable to adapt to changes in existing requirements or the adoption of new requirements or policies, or if we are not able to maintain regulatory compliance, we may lose any marketing approval or certification that we may have obtained and we may not achieve or sustain profitability.

Modifications to any approved or certified device products may require us to obtain new PMA approvals or approvals of a PMA supplement or foreign certification, and if we market modified products without obtaining necessary approvals or certifications, we may be required to cease marketing or recall the modified products until required approvals or certifications are obtained

Certain modifications to any device product for which we receive PMA approval may require approval of a new PMA or a PMA supplement, or alternatively a notification or other submission to the FDA. The FDA requires device manufacturers to make and document a determination of whether a modification requires an approval, supplement or clearance; however, the FDA can review a manufacturer's decision. The FDA may not agree with our decisions regarding whether approval of a modification is necessary. We may make modifications to approved devices in the future that we believe do not require approval of a new PMA or PMA supplement. If the FDA disagrees with our determination and requires us to submit a new PMA or PMA supplement for modifications to our previously approved device products, we may be required to cease marketing or to recall the modified product until we obtain approval, and we may be subject to significant regulatory fines or penalties. In addition, the FDA may not approve our products for the indications that are necessary or desirable for successful commercialization or could require clinical trials to support any modifications. Any delay or failure in obtaining required approvals would adversely affect our ability to introduce new or enhanced products in a timely manner, which, in turn, would harm our future growth.

In the EU, we must inform the notified body that carried out the conformity assessment of the medical devices that we market or sell in the EU and the EEA of any planned substantial changes to our quality system or substantial changes to our medical devices that could affect compliance with the general safety and performance requirements laid down in Annex I to the EU Medical Devices Regulation or cause a substantial change to the intended use for which the device has been CE marked. The notified body will then assess the planned changes and verify whether they affect the products' ongoing conformity with the EU Medical Devices Regulation. If the assessment is favorable, the notified body will issue a new certificate of conformity or an addendum to the existing certificate attesting compliance with the general safety and performance requirements and quality system requirements laid down in the Annexes to the EU Medical Devices Regulation. The notified body may disagree with our proposed changes and product introductions or modifications could be delayed or canceled, which could adversely affect our ability to grow our business.

Our medical device products, if approved or certified, may cause or contribute to adverse medical events or be subject to failures or malfunctions that we are required to report to the FDA or similar foreign regulatory authorities, and if we fail to do so, we would be subject to sanctions that could harm our reputation, business, financial condition and results of operations. The discovery of serious safety issues with our products, or a recall of our products either voluntarily or at the direction of the FDA or another governmental authority, could have a negative impact on us

We are subject to the FDA's medical device reporting regulations and similar foreign regulations, which require us to report to the FDA when we receive or become aware of information that reasonably suggests that one or more of our products may have caused or contributed to a death or serious injury or malfunctioned in a way that, if the malfunction were to recur, it could cause or contribute to a death or serious injury. The timing of our obligation to report is triggered by the date we become aware of the adverse event, as well as the nature of the event. We may fail to report adverse events of which we become aware within the prescribed timeframe. We may also fail to recognize that we have become aware of a reportable adverse event, especially if it is not reported to us as an adverse event or if it is an adverse event that is unexpected or removed in time from the use of the product. If we fail to comply with our reporting obligations, the FDA or foreign regulatory authorities could take action, including warning letters, untitled letters, administrative actions, criminal prosecution, imposition of civil monetary penalties, revocation of our device approval, seizure of our products or delay in approval or certification of future products.

The FDA and foreign regulatory bodies have the authority to require the recall of commercialized products in the event of material deficiencies or defects in design or manufacture of a product or in the event that a product poses an unacceptable risk to health. The FDA's authority to require a recall must be based on a finding that there is reasonable probability that the device could cause serious injury or death. We may also choose to voluntarily recall a product if any material deficiency is found. A government-mandated or voluntary recall by us could occur as a result of an unacceptable risk to health, component failures, malfunctions, manufacturing defects, labeling or design deficiencies, packaging defects or other deficiencies or failures to comply with applicable regulations. Product defects or other errors may occur in the future.

Depending on the corrective action we take to redress a product's deficiencies or defects, the FDA, foreign regulatory authorities or notified bodies may require, or we may decide, that we will need to obtain new approvals or certifications for the device before we may market or distribute the corrected device. Seeking such approvals or certifications may delay our ability to replace the recalled devices in a timely manner. Moreover, if we do not adequately address problems associated with our devices, we may face additional regulatory enforcement action, including FDA and similar foreign regulatory authorities warning letters, product seizure, injunctions, administrative penalties or civil or criminal fines.

Companies are required to maintain certain records of recalls and corrections, even if they are not reportable to the FDA. We may initiate voluntary withdrawals or corrections for our products in the future that we determine do not require notification of the FDA or foreign regulatory authorities. If the FDA or foreign regulatory authorities disagree with our determinations, it could require us to report those actions as recalls and we may be subject to enforcement action. A future recall announcement could harm our reputation with customers, potentially lead to product liability claims against us and negatively affect our sales. Any corrective action, whether voluntary or involuntary, as well as defending ourselves in a lawsuit, will require the dedication of our time and capital, distract management from operating our business and may harm our reputation and financial results.

Virtue SAB is a drug/device combination, which may result in additional regulatory and other risks

We believe our Virtue SAB product candidate is subject to regulation in the United States as a drug/device combination product. If marketed individually, each component of Virtue SAB would be subject to different regulatory pathways and would require approval of independent marketing applications by the FDA. A combination product, however, is assigned to an FDA center that will have primary jurisdiction over its regulation based on a determination of the combination product's primary mode of action, which is the single mode of action that provides the most important therapeutic effect. In the case of Virtue SAB, we believe that the primary mode of action is attributable to the device component of the product. Accordingly, we believe that the FDA's Center for Devices and Radiological Health ("CDRH") will have primary jurisdiction over pre-market development and review of Virtue SAB and expect to seek initial approval of Virtue SAB through submission of a single PMA for each indication with review led by CDRH. The determination of whether a combination product requires a single marketing application or two separate marketing applications for each component is made by the FDA on a case-by-case basis. Although we believe a single marketing application for the approval of a combination product would be successful, there can be no assurance that the FDA will not determine that separate marketing applications are necessary. If the FDA were to make that determination, it could significantly increase the resources and time required to bring a particular combination product to market.

The EU regulates medical devices and medicinal products separately, through different legislative instruments, and the applicable requirements will vary depending on the type of drug-device combination product. For instance, drug-delivery products intended to administer a medicinal product where the medicinal product and the device form a single integral product are regulated as medicinal products in the EU. In such a case, the marketing authorization application must include — where available — the results of the assessment of the conformity of the device part with the EU Medical Devices Regulation contained in the manufacturer's EU declaration of conformity of the device or the relevant certificate issued by a notified body. If the marketing authorization application does not include the results of the conformity assessment and where for the conformity assessment of the device, if used separately, the involvement of a notified body is required, the EMA or the EU member state competent authority must require the applicant to provide a notified body opinion on the conformity of the device. By contrast, in case of drug-delivery products intended to administer a medicinal product where the device and the medicinal product do not form a single integral product (but are, e.g., co-packaged), the medicinal product is regulated in accordance with the rules for medicinal products described above while the device part is regulated as a medical device and will have to comply with all the requirements set forth by the EU Medical Devices Regulation.

Although the FDA and similar foreign regulatory agencies have or may have systems in place for the review and approval or certification of combination products such as ours, we have and may continue to experience delays in the development and commercialization of our product candidates due to regulatory timing constraints and uncertainties in the product development and approval process, as well as coordination between two different centers within FDA responsible for review of the different components of the combination product.

If the FDA does not conclude that SirolimusEFR as a standalone product candidate satisfies the requirements for the Section 505(b)(2) regulatory approval pathway, or if the requirements for SirolimusEFR under Section 505(b)(2) are not as we expect, the approval pathway for SirolimusEFR may take significantly longer, cost significantly more and entail significantly greater complications and risks than anticipated, and in either case may not be successful

We may seek FDA approvals for our SirolimusEFR as both a standalone drug product candidate and as part of our Virtue SAB product candidate as well as, potentially, other device/drug combination product candidates for other clinical applications. For the standalone drug product candidate development program, we may seek approval for SirolimusEFR to treat conditions such as ophthalmic inflammatory disease (uveitis) and acute or chronic joint inflammation (osteoarthritis), through the Section 505(b)(2) regulatory pathway. The Drug Price Competition and Patent Term Restoration Act of 1984, also known as the Hatch-Waxman Amendments, added Section 505(b)(2) to the FDCA. Section 505(b)(2) permits the filing of an NDA where at least some of the information required for approval comes from trials that were not conducted by or for the applicant and for which the applicant has not obtained a right of reference. Section 505(b)(2), if we are eligible to pursue such a marketing application, would allow an NDA we submit to the FDA to rely in part on data in the public domain or the FDA's prior conclusions regarding the safety and effectiveness of approved drugs, which could expedite the development program for our product candidates by potentially decreasing the amount of clinical data that we would need to generate in order to obtain FDA approval. If the FDA does not allow us to pursue the Section 505(b)(2) regulatory pathway as we anticipate, we may need to conduct additional clinical studies, provide additional data and information and meet additional standards to obtain regulatory approval, if ever. If this were to occur, the time and financial resources required to obtain FDA approval for SirolimusEFR, and complications and risks associated with the development of certain of our product candidates, would likely substantially increase. Moreover, inability to pursue the Section 505(b)(2) regulatory pathway could result in competitive products reaching the market before our product candidates, which could impact our competitive position and prospects. Even if we are allowed to pursue the Section 505(b)(2) regulatory pathway, we cannot assure you that our product candidates will receive the requisite approvals for commercialization, or that a competitor would not obtain approval first along with subsequent market exclusivity from the FDA, thereby delaying potential approval of our product.

In addition, the pharmaceutical industry is highly competitive, and Section 505(b)(2) NDAs are subject to special requirements designed to protect the patent rights of sponsors of previously approved drugs that are referenced in a Section 505(b)(2) NDA. These requirements may give rise to patent litigation and mandatory delays in approval of our NDAs for up to 30 months or longer depending on the outcome of any litigation. It is not uncommon for a manufacturer of an approved product to file a citizen petition with the FDA seeking to delay approval of, or impose additional approval requirements for, pending competing products. If successful, such petitions can significantly delay, or even prevent, the approval of the new product. However, even if the FDA ultimately denies such a petition, the FDA may substantially delay approval while it considers and responds to the petition. In addition, even if we are able to utilize the Section 505(b)(2) regulatory pathway, there is no guarantee this would ultimately lead to expedited product development or earlier approval.

Moreover, even if our product candidates are approved under Section 505(b)(2), the approval may be subject to limitations on the indicated uses for which the products may be marketed or to other conditions of approval or may contain requirements for costly post-marketing testing and surveillance to monitor the safety or efficacy of the products.

The EU regulates medical devices and medicinal products separately, through different legislative instruments, and the applicable requirements will vary depending on the type of drug-device combination product. For instance, drug-delivery products intended to administer a medicinal product where the medicinal product and the device form a single integral product are regulated as medicinal products in the EU. In such a case, the marketing authorization application must include — where available — the results of the assessment of the conformity of the device part with the EU Medical Devices Regulation contained in the manufacturer's EU declaration of conformity of the device or the relevant certificate issued by a notified body. If the marketing authorization application does not include the results of the conformity assessment and where for the conformity assessment of the device, if used separately, the involvement of a notified body is required, the EMA or the EU member state competent authority must require the applicant to provide a notified body opinion on the conformity of the device. By contrast, in case of drug-delivery products intended to administer a medicinal product where the device and the medicinal product do not form a single integral product (but are, e.g., co-packaged), the medicinal product is regulated in accordance with the rules for medicinal products described above while the device part is regulated as a medical device and will have to comply with all the requirements set forth by the EU Medical Devices Regulation. Should SirolimusEFR be considered a drug product, it would be subject to various other EMA regulatory requirements and timelines.

Changes in methods of product candidate manufacturing or formulation may result in additional costs or delay

As product candidates proceed through preclinical studies to late-stage clinical studies towards potential approval and commercialization, it is common that various aspects of the development program, such as manufacturing methods and formulation, are altered along the way in an effort to optimize processes and results. Such changes carry the risk that they will not achieve these intended objectives. Any of these changes could cause our product candidates to perform differently and affect the timing, continuation or results of planned clinical studies or other future clinical studies conducted with the altered materials. Such changes may also require additional testing and/or FDA or foreign regulatory authority approval or notified body certification. This could delay completion of clinical studies, require the conduct of bridging clinical studies or the repetition of one or more clinical studies, increase clinical study costs, delay approval of our product candidates and jeopardize our ability to commence sales and generate revenue.

Our relationships with physicians, patients and payors in the United States and elsewhere may be subject, directly or indirectly, to applicable anti-kickback, fraud and abuse, false claims, transparency, and other healthcare laws and regulations

Our current and future operations with respect to the commercialization of our products are subject to various U.S. federal, state and foreign healthcare laws and regulations. These laws will affect our operations, sales and marketing activities, support and education programs and our relationships with physicians and other customers and third-party payors. The laws that may affect our ability to operate include:

- the federal Anti-Kickback Statute, which prohibits, among other things, persons or entities from knowingly and willfully soliciting, offering, receiving or providing remuneration, directly or indirectly, in cash or in kind, to induce or reward, or in return for, 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 a federal healthcare program such as Medicare and Medicaid. A person or entity does not need to have actual knowledge of the federal Anti-Kickback Statute or specific intent to violate it to have committed a violation;

- the federal False Claims Act, which imposes criminal and civil penalties, including through civil whistleblower or qui tam actions, against individuals or entities for knowingly presenting, or causing to be presented, to the federal government, claims for payment that are false or fraudulent or making a false statement to avoid, decrease or conceal an obligation to pay money to the federal government; in addition, the government may assert that a claim including items or services resulting from a violation of the federal Anti-Kickback Statute constitutes a false or fraudulent claim for purposes of the federal False Claims Act;

- the Health Insurance Portability and Accountability Act of 1996, as amended by the Health Information Technology for Economic and Clinical Health Act of 1996 ("HIPAA"), which imposes criminal and civil liability for executing a scheme to defraud any healthcare benefit program or making false statements relating to healthcare matters. Similar to the federal Anti-Kickback Statute, a person or entity does not need to have actual knowledge of the statute or specific intent to violate it to have committed a violation;

- the federal Physician Payment Sunshine Act, which requires manufacturers of drugs, devices, biologics and medical supplies for which payment is available under Medicare, Medicaid or the Children's Health Insurance Program (with certain exceptions) to report annually to the government information related to payments or other "transfers of value" made to physicians (defined to include doctors, dentists, optometrists, podiatrists and chiropractors), certain non-physician practitioners (physician assistants, nurse practitioners, clinical nurse specialists, certified registered nurse anesthetists, anesthesiology assistants and certified nurse midwives) and teaching hospitals, and requires applicable manufacturers and group purchasing organizations to report annually to the government ownership and investment interests held by the physicians described above and their immediate family members and payments or other "transfers of value" to such physician owners (manufacturers are required to submit reports to the government by the 90th day of each calendar year); and

- analogous state and foreign laws and regulations, such as state anti-kickback and false claims laws, which may apply to sales or marketing arrangements and claims involving healthcare items or services reimbursed by non-governmental third-party payors, including private insurers; state laws that require pharmaceutical companies to comply with the pharmaceutical industry's voluntary compliance guidelines and the relevant compliance guidance promulgated by the federal government; and state and foreign laws that require drug and medical device manufacturers to report information related to payments and other transfers of value to physicians and other healthcare providers or marketing expenditures and pricing information.

Ensuring that our internal operations and business arrangements with third parties comply with applicable healthcare laws and regulations could involve substantial costs. Certain physicians who may be in a position to influence the ordering or use of our products in procedures they perform have ownership interests in us and/or receive compensation for consulting and advisory services provided to us. It is possible that governmental authorities will conclude that our business practices do not comply with applicable fraud and abuse or other healthcare laws and regulations or guidance. If our operations are found to be in violation of such laws or any other governmental laws and regulations that may apply to us, we may be subject to significant penalties, including civil, criminal and administrative penalties, damages, fines, exclusion from U.S. government funded healthcare programs, such as Medicare and Medicaid, disgorgement, individual imprisonment, contractual damages, reputational harm, diminished profits and the curtailment or restructuring of our operations.

Healthcare cost-containment pressures and legislative or administrative reforms resulting in restrictive coverage and reimbursement practices of third-party payors could decrease the demand for our products, the prices that customers are willing to pay for those products and the number of procedures performed using our devices, which could have an adverse effect on our business

Our products are, and our future products are expected to be, purchased principally by hospitals and ambulatory medical facilities, which typically bill various third-party payors, including governmental programs, such as Medicare and Medicaid, private insurance plans and managed care plans, for the healthcare services provided to their patients. Because there is often no separate reimbursement for products used in surgical procedures, the additional cost associated with the use of some of our products can impact the profit margin of the hospital or surgery center where the procedure is performed. Some of our target customers may be unwilling to adopt our products in light of the additional associated cost. Further, any decline in the amount payors are willing to reimburse our customers for the procedures using our products may make it difficult for customers to adopt our products and could create additional pricing pressure for us. We may be unable to sell our products on a profitable basis if third-party payors deny coverage or reduce their current levels of reimbursement. The ability of our customers to obtain appropriate coverage and reimbursement for our products or procedures using our products from government and private third-party payors is critical to our success.

Reimbursement varies from country to country, state to state and plan to plan, and can significantly influence the acceptance of new products and services. Certain private third-party payors may view some procedures using our products as experimental and may not provide coverage. Third-party payors may not cover and reimburse the procedures using our products in whole or in part in the future, or payment rates may not be adequate, or both. For products administered under the supervision of a physician, obtaining coverage and adequate reimbursement may be particularly difficult because of the higher prices often associated with such drugs. Additionally, separate reimbursement for the product itself or the treatment or procedure in which the product is used may not be available, which may impact physician utilization. Further, the adequacy of coverage and reimbursement by third-party payors is also related to billing codes to describe procedures performed using our products. Hospitals and physicians use several billing codes to bill for such procedures. Third-party payors may not continue to recognize the billing codes available for use by our customers.

Reimbursement rates are unpredictable, and we cannot project how our business may be affected by future legislative and regulatory developments. Future legislation or regulation, or changing payment methodologies, may have a material adverse effect on our business, and reimbursement may not be adequate for all customers. From time to time, typically on an annual basis, payment amounts are updated and revised by third-party payors. Because the cost of our products generally is recovered by the healthcare provider as part of the payment for performing a procedure and not separately reimbursed, these updates could directly impact the demand for our products. We cannot predict how pending and future healthcare legislation will impact our business and any changes in coverage and reimbursement that further restricts coverage of our products or lowers reimbursement for procedures using our devices could materially affect our business.

After we develop new products or seek to market our products for new indications, once approved (or certified), we may find limited demand for the product unless government and private third-party payors provide adequate coverage and reimbursement. Even with reimbursement approval and coverage by government and private payors, providers submitting reimbursement claims may face delays in payment if there is confusion by providers regarding the appropriate codes to use in seeking reimbursement. Such delays may create an unfavorable impression within the marketplace regarding the level of reimbursement or coverage available for our products.

Demand for our products or new approved (or certified) indications for our existing products may fluctuate over time if federal, state and foreign legislative or administrative policy changes affect coverage or reimbursement levels for our products, or the services related to our products. In the United States, there have been, and we expect there will continue to be, legislative and regulatory proposals to change the healthcare system, some of which could significantly affect our business. Legislative or administrative reforms to the U.S. or international reimbursement systems in a manner that significantly reduces reimbursement for procedures using our medical devices or denies coverage for those procedures could have a material adverse effect on our business, financial condition, results of operations and prospects.

Actual or perceived failures to comply with U.S. and foreign privacy and data protection laws, regulations and standards may adversely affect our business, operations and financial performance

We are subject to or affected by numerous federal, state and foreign laws and regulations, as well as regulatory guidance, governing the collection, use, disclosure, retention and security of personal data, such as information that we collect about patients and healthcare providers in connection with clinical studies in the United States and abroad. The global data protection landscape is rapidly evolving, and implementation standards and enforcement practices are likely to remain uncertain for the foreseeable future. This evolution may create uncertainty in our business, affect our or our collaborators', service providers' and contractors' ability to operate in certain jurisdictions or to collect, store, transfer use and share personal information, necessitate the acceptance of more onerous obligations in our contracts, result in liability or impose additional costs on us. The cost of compliance with these laws, regulations and standards is high and is likely to increase in the future. Any failure or perceived failure by us or our collaborators, service providers and contractors to comply with federal, state or foreign laws or regulation, our internal policies and procedures or our contracts governing processing of personal information could result in negative publicity, diversion of management time and effort and proceedings against us by governmental entities or others. In many jurisdictions, enforcement actions and consequences for noncompliance are rising.

In the United States, HIPAA, as amended by the Health Information Technology for Economic and Clinical Health Act and its implementing regulations, imposes privacy, security and breach notification obligations on certain healthcare providers, health plans, and healthcare clearinghouses, known as covered entities, as well as their business associates that perform certain services that involve creating, receiving, maintaining or transmitting individually identifiable health information for or on behalf of such covered entities, and their covered subcontractors. HIPAA establishes privacy and security standards that limit the use and disclosure of individually identifiable health information and protected health information ("PHI") and requires the implementation of administrative, physical and technological safeguards to protect the privacy of PHI and ensure the confidentiality, integrity and availability of electronic PHI. Most healthcare providers, including research institutions from which we obtain patient health information, are subject to privacy and security regulations promulgated under HIPAA. Covered entities are those that electronically transmit health information in connection with transactions susceptible to standards set by the U.S. Department of Health and Human Services ("HHS") and may concern billing and payment for services or insurance coverage. Business associates may perform or assist in performance of a function or activity involving the use or disclosure of individually identifiable health information, or other activities that may involve disclosure of individually identifiable health information by the covered entity. While we do not believe that we are currently acting as a covered entity or business associate under HIPAA and, thus, are not directly regulated under HIPAA, federal and state regulators may disagree and bring an enforcement action under HIPAA against us.

In addition, certain state laws govern the privacy and security of health-related and other personal information, many of which differ from each other in significant ways and often are not preempted by HIPAA, thus complicating compliance efforts. By way of example, the California Consumer Privacy Act (the "CCPA"), which went into effect on January 1, 2020, gives California residents expanded rights to access and delete their personal information, opt out of certain personal information sharing, and receive detailed information about how their personal information is used. The CCPA provides for civil penalties for violations, as well as a private right of action for data breaches that is expected to increase data breach litigation. The CCPA may increase our compliance costs and potential liability. Further, the California Privacy Rights Act (the "CPRA") recently passed in California. The CPRA significantly amends the CCPA and will impose additional data protection obligations on covered businesses, including additional consumer rights processes, limitations on data uses, new audit requirements for higher risk data and opt outs for certain uses of sensitive data. It will also create a new California data protection agency authorized to issue substantive regulations and could result in increased privacy and information security enforcement. The majority of the provisions went into effect on January 1, 2023, and additional compliance investment and potential business process changes may be required. Similar laws have passed in Virginia, Colorado, Connecticut and Utah, and have been proposed in other states and at the federal level, reflecting a trend toward more stringent privacy legislation in the United States. The enactment of such laws could have potentially conflicting requirements that would make compliance challenging. In the event that we are subject to or affected by HIPAA, the CCPA, the CPRA or other domestic privacy and data protection laws, any liability from failure to comply with the requirements of these laws could adversely affect our financial condition.

Our operations abroad may also be subject to increased scrutiny or attention from data protection authorities. For example, the EU and the UK General Data Protection Regulations (respectively, the "EU GDPR" and the "UK GDPR," together, the "GDPR**")** each impose strict requirements for processing the personal data of individuals within the EEA, and/or the UK and to processing that occurs in the context of an establishment in, respectively, the EEA and/or UK. The EU GDPR which went into effect in May 2018 and introduces strict requirements for processing the personal information of EU subjects, including clinical study data. The GDPR has and will continue to increase compliance burdens on us, including by mandating potentially burdensome documentation requirements and granting certain rights to individuals to control how we collect, use, disclose, retain and process information about them. The processing of sensitive personal data, such as physical health condition, may impose heightened compliance burdens under the GDPR and is a topic of active interest among foreign regulators. Companies that must comply with the GDPR face increased compliance obligations and risk, including more robust regulatory enforcement of data protection requirements and potential fines for noncompliance of up to €20 million under the EU GDPR and £17.5 million under the UK GDPR or 4% of the annual global revenues of the noncompliant company, whichever is greater. In addition to these fines, supervisory authorities have extensive audit and inspection rights, and powers to order temporary or permanent bans on all or some processing of personal data carried out by noncompliant actors; the GDPR also confers a private right of action on data subjects and consumer associations to lodge complaints, seek judicial remedies and obtain compensation for damages resulting from violations of the GDPR.

The existence of parallel regimes under the EU GDPR and UK GDPR, and divergence in respect of implementing or supplementary laws across the EEA and UK in certain areas, means that we could be subject to potentially overlapping or divergent enforcement actions for certain actual or perceived violations. Among other requirements, the GDPR regulates transfers of personal data subject to the GDPR to third countries that have not been found to provide adequate protection to such personal data, including the United States; in July 2020, the Court of Justice of the EU, (the "CJEU"), limited how organizations could lawfully transfer personal data from the EEA and UK to the United States by invalidating the Privacy Shield for purposes of international transfers and imposing further restrictions on the use of standard contractual clauses ("SCCs"). The European Commission issued revised SCCs on June 4, 2021 to account for the decision of the CJEU and recommendations made by the European Data Protection Board. The revised SCCs must be used for relevant new data transfers from September 27, 2021; existing standard contractual clauses arrangements must be migrated to the revised clauses by December 27, 2022. The revised SCCs cannot be used for transfers to non-EEA entities whose processing is already subject to the GDPR; however, no equivalent standard data protection clauses have been issued and approved by the European Commission and, therefore, current market practice is largely to use the SCCs notwithstanding this issue. The new SCCs apply only to the transfer of personal data outside of the EEA and not the UK. The UK's Information Commissioner's Office has published new data transfer standard contracts for transfers from the UK under the UK GDPR. This new documentation will be mandatory for relevant data transfers from September 21, 2022; existing standard contractual clauses arrangements must be migrated to the new documentation by March 21, 2024. The relationship between the UK and the EU in relation to certain aspects of data protection law remains unclear, and the European Commission has adopted an adequacy decision in favor of the UK, enabling data transfers from EU member states to the UK without additional safeguards. However, the UK adequacy decision will automatically expire in June 2025 unless the European Commission re-assesses and renews or extends that decision. In September 2021, the UK government launched a consultation on its proposals for wide-ranging reform of UK data protection laws following Brexit and the response to this consultation was published in June 2022. There is a risk that any material changes which are made to the UK data protection regime could result in the European Commission reviewing the UK adequacy decision and the UK losing its adequacy decision if the European Commission deems the UK no longer provides adequate protection of personal data.

As supervisory authorities issue further guidance on personal data export mechanisms, including the aforementioned 'supplementary measures,' and/or start taking enforcement action, we could suffer additional costs, complaints and/or regulatory investigations or fines, and/or if we are otherwise unable to transfer personal data between and among countries and regions in which we operate, it could affect the manner in which we provide our services, the geographical location or segregation of our relevant systems and operations. The GDPR may impose additional responsibility and liability in relation to personal data that we process and we may be required to put in place additional mechanisms, at significant cost and diversion of management attention, to ensure compliance with the new data protection rules. This may be onerous and may adversely affect our business, operations and financial performance.

The EU has also proposed a Regulation on Privacy and Electronic Communications, or ePrivacy Regulation, which, if adopted, would impose new obligations on the use of personal data in the context of electronic communications, particularly with respect to online tracking technologies and direct marketing. Additionally, the EU adopted the EU Clinical Trials Regulation, which came into effect on January 31, 2022. This regulation imposes new obligations on the use of data generated from clinical trials and enables European patients to have the opportunity to access information about clinical trials. Failure or perceived failure to comply with the GDPR, the EU Clinical Trials Regulations or other countries' privacy or data security-related laws, rules or regulations could result in significant regulatory penalties and fines, affect our compliance with contracts entered into with our partners, collaborators and other third-party payors, and could have an adverse effect on our reputation, business and financial condition.

Environmental and health safety laws may result in liabilities, expenses and restrictions on our operations

Federal, state, local and foreign laws regarding environmental protection, hazardous substances and human health and safety may adversely affect our business. Using hazardous substances in our operations exposes us to the risk of accidental injury, contamination or other liability from the use, storage, importation, handling or disposal of hazardous materials. If our or our suppliers' operations result in the contamination of the environment or expose individuals to hazardous substances, we could be liable for damages and fines, and any liability could significantly exceed our insurance coverage and have a material adverse effect on our business, financial condition, results of operations and prospects. We maintain insurance for certain environmental risks, subject to substantial deductibles; however, we cannot assure you we can continue to maintain this insurance in the future at an acceptable cost, or at all. Future changes to environmental and health and safety laws could cause us to incur additional expenses or restrict our operations.

We are subject to anti-bribery, anti-corruption and anti-money laundering laws, including the U.S. Foreign Corrupt Practices Act, in which violations of these laws could result in substantial penalties and prosecution

We are exposed to trade and economic sanctions and other restrictions imposed by the United States and other governments and organizations. The U.S. Departments of Justice, Commerce, State and Treasury and other federal agencies and authorities have a broad range of civil and criminal penalties they may seek to impose against corporations and individuals for violations of economic sanctions laws, export control laws, and other federal statutes and regulations, including sanctions administered by the Office of Foreign Assets Control and other U.S. governmental agencies. Governmental regulation of the import or export of our products, or our failure to obtain any required import or export authorization for our products under the laws of the United States or other countries, could harm our ability to engage in international trade and adversely affect our revenue. Moreover, any new export or import restrictions, new legislation or shifting approaches in the enforcement or scope of existing regulations, or in the countries, persons or technologies targeted by such regulations, could result in decreased use of our products by, or in our decreased ability to export our products to existing or potential customers or to conduct business with foreign parties.

The FCPA, the UK Bribery Act of 2010 (the "Bribery Act"), and similar laws around the world generally prohibit U.S. companies and their employees and intermediaries from offering, promising, authorizing or making improper payments to foreign government officials for the purpose of obtaining or retaining business or gaining any advantage. We face significant risks if we, which includes our third party business partners and intermediaries, fail to comply with the FCPA or other anti-corruption and anti-bribery laws. In addition, the Bribery Act prohibits both domestic and international bribery, as well as bribery across both private and public sectors. An organization that "fails to prevent bribery" by anyone associated with the organization can be charged under the Bribery Act unless the organization can establish the defense of having implemented "adequate procedures" to prevent bribery. We are in the process of implementing policies and procedures intended to help ensure compliance with these laws, though such compliance measures ultimately may not be effective in prohibiting our employees, contractors, business partners, intermediaries or agents from violating or circumventing our policies and/or the law.

Under these laws and regulations, as well as other anti-corruption laws, anti-money laundering laws, export control laws, customs laws, sanctions laws and other laws governing our operations, various government agencies may require export licenses, may seek to impose modifications to business practices, including cessation of business activities in sanctioned countries or with sanctioned persons or entities and modifications to compliance programs, which may increase compliance costs, and may subject us to fines, penalties and other sanctions. An actual or alleged violation of these laws or regulations would negatively affect our business, financial condition and results of operations.

Risks Related to Our Intellectual Property

We may not effectively be able to protect or enforce our intellectual property, which could have a material adverse effect on our business, financial condition, results of operations and prospects

The medical innovation market in which we participate is largely technology driven. Physicians historically have moved quickly to new products and new technologies. As a result, intellectual property rights, particularly patents and trade secrets, play a significant role in product development and differentiation. Patents enable us to stop unauthorized third parties from making, using, selling, offering for sale or importing products that are covered under valid and enforceable patents. Trade secrets enable us to protect information that we do not wish to divulge to the public. Trademarks also play a role in product differentiation. If we are unable to adequately protect our intellectual property and proprietary technology, competitors may be able to use our technologies or the goodwill we have acquired in the marketplace and erode or negate any competitive advantage we may have, which could ultimately harm our business and ability to achieve profitability. In order to protect our intellectual property, we may be involved in intellectual property litigation, which is inherently complex, expensive and unpredictable.

We hold patents and pending patent applications. Our patents cover inventions, which include features of our technologies or products. However, our competitors may seek to produce products that include our technologies that are not subject to patent protection, which may negatively affect our business.

The patents we own may not be sufficiently broad to protect our technology or to give us any competitive advantage. We are unable to provide any assurances that any of our patents, or patents to which we have rights through licensing agreements, have, or that any of our pending patent applications that mature into issued patents will include, claims with a scope sufficient to protect our technology or products, any additional features we develop with respect to our technology or products, or any new technology or products that we seek to develop in the future. Our patents could be challenged as invalid or unenforceable, or circumvented by competitors. Medical device patents involve complex legal, scientific and factual questions, and therefore, the issuance, scope, validity and enforceability of any patent claims that we may obtain cannot be predicted with certainty. Any patents for which we have applied may not be granted. Third parties own numerous U.S. and foreign issued patents and pending patent applications in the fields in which we have developed our technology or manufacture and sell our products. Third party-owned patents can be an obstacle to our ability to obtain patent protection for our technology.

Because patent applications in the United States and most other countries are confidential for a period of time after filing, we cannot be certain that we were the first to file any patent application related to our products. Furthermore, for United States applications in which all claims are entitled to a priority date before March 16, 2013 (the date when United States patent law changed from granting rights to the first-to-invent to the first-to-file), an interference proceeding can be provoked by a third-party or instituted by the United States Patent and Trademark Office (the “USPTO”), to determine who was the first to invent any of the subject matter covered by the patent claims of our applications. We cannot be certain that we are the first to invent the inventions covered by pending patent applications entitled to a priority date before March 16, 2013, and, if we are not, we may be subject to priority disputes.

We may be required to disclaim part or all of the term of certain patents or all of the term of certain patent applications. There may be prior art of which we are not aware that may affect the validity or enforceability of a patent claim, and we may be subject to a third-party pre-issuance submission of prior art to the USPTO. There also may be prior art of which we are aware, but which we do not believe affects the validity or enforceability of a claim, which may, nonetheless, ultimately be found to affect the validity or enforceability of a claim through a post-issuance proceeding or in litigation. No assurance can be given that if challenged, our patents would be declared by a court to be valid or enforceable, or that even if found valid and enforceable, a competitor’s technology or product would be found by a court to infringe our patents.

We may analyze patents or patent applications of our competitors that we believe are relevant to our activities and consider that we are free to operate in relation to our products, but our competitors may obtain issued claims, including in patents we considered to be unrelated, which block our efforts or may potentially result in our technology or products or our activities infringing such claims. The possibility exists that others will develop technology or products which have the same effect as our technology or products on an independent basis which do not infringe our patents or other intellectual property rights or will design around the claims of patents that we have had issued that cover our technology or products.

Challenges raised in patent infringement litigation may cause determinations that our patents or licensed patents are invalid, unenforceable, or otherwise subject to limitations. In such events, third parties may use the discoveries or technologies without paying damages, licensing fees or royalties to us, which could significantly diminish the value of our intellectual property. We could also be adversely affected if our licensors terminate licenses granted to us to use their patented technology. Thus, any patents that we may own, or to which we have rights through licensing agreements, may not provide sufficient protection against competitors. Furthermore, an adverse decision in a judicial or administrative proceeding can result in a third party receiving the patent right sought by us, which, in turn, could affect our ability to commercialize our technology or products.

We hold trademark applications or registrations relating to our products. Our trademarks may also be challenged as invalid or not distinctive by competitors or third parties. Registration of a trademark is not conclusive as to its validity or the right to use such trademark. Third parties own numerous U.S. and foreign trademark registrations and trademark applications in the fields in which we manufacture and sell our products.

We may be unable to enforce our intellectual property rights throughout the world

Filing, prosecuting and defending patents covering our products in all countries throughout the world would be prohibitively expensive, and the laws of some foreign countries do not protect our intellectual property rights to the same extent as the laws of the United States. Many companies have encountered significant problems in protecting and defending intellectual property rights in certain foreign jurisdictions. This could make it difficult for us to stop infringement of our foreign patents, if obtained, or the misappropriation of our other intellectual property rights. For example, some foreign countries have compulsory licensing laws under which a patent owner must grant licenses to third parties. In addition, some countries limit the enforceability of patents against third parties, including government agencies or government contractors. In these countries, patents may provide limited or no benefit.

Patent protection must ultimately be sought on a country-by-country basis, which is an expensive and time-consuming process with uncertain outcomes. Hence, we may choose not to seek patent protection in certain countries, and we will not have the benefit of patent protection in those countries. Our competitors or other third parties might conduct research and development activities in countries where we do not have patent rights and then use the information learned from such activities to develop competitive products for sale in our major commercial markets.

Additionally, in the event that our trademarks are successfully challenged in the United States and in jurisdictions outside of the United States, we could be forced to rebrand our products, which could result in loss of brand recognition and could require us to devote resources to advertising and marketing new brands. Our competitors may infringe our trademarks, and we may not have adequate resources to enforce our trademarks.

The legal systems of certain countries, particularly certain developing countries, do not favor the enforcement of patents, trade secrets and other intellectual property protection, which could make it difficult for us to stop the infringement of our patents or marketing of competing products against third parties in violation of our intellectual property rights generally. The initiation of proceedings by third parties to challenge the scope or validity of our patent rights in foreign jurisdictions could result in substantial cost and divert our efforts and attention from other aspects of our business. Proceedings to enforce our patent rights in the United States and in jurisdictions outside of the United States could result in substantial costs and divert our efforts and attention from other aspects of our business, could put our patents at risk of being invalidated or interpreted narrowly and our patent applications at risk of not issuing, and could provoke third parties to assert claims against us. We may not prevail in any lawsuits that we initiate and the damages or other remedies awarded, if any, may not be commercially meaningful. Further, we may not always detect infringement of our intellectual property rights, and defending our intellectual property rights, even if successfully detected, prosecuted, enjoined, or remedied, could result in the expenditure of significant financial and managerial resources. Accordingly, our efforts to enforce our intellectual property rights around the world may be inadequate to obtain a significant commercial advantage from the intellectual property that we develop or license.

If we cannot protect and control unpatented trade secrets, know-how and other proprietary technology, we may suffer competitive harm

Besides patented intellectual property, we also rely on trade secrets, unpatented proprietary technology, confidential information and know-how to protect our technology and maintain our competitive position, particularly when patent protection is not appropriate or obtainable. These include, but may not be limited to, with respect to Virtue SAB and other product candidates our Focal Therapies group intends to develop, the chemical and physical aspects of the polymers and excipients in our formulation and the process by which our formulation is mixed, purified, concentrated, diluted, stored, filled into vials, freeze dried, sterilized, inspected, labeled and packaged, as well as physical and engineering aspects of our catheter, detailed specifications of our porous balloon, and physical and engineering aspects of our dose unit, recon unit, and pre-filled syringe. With respect to BackBeat CNT, this may include, but may not be limited to, certain aspects of our proprietary algorithms. However, trade secrets and unpatented proprietary technology are difficult to protect. To protect proprietary technology and processes, we rely in part on confidentiality and intellectual property assignment agreements with our employees, consultants and others. These agreements may not prevent disclosure of confidential information nor result in the effective assignment to us of intellectual property and may not provide an adequate remedy if unauthorized disclosure of confidential information or other breaches of the agreements occur. Others may independently discover or reverse engineer our trade secrets and proprietary information licensed to us or that we own in a manner that could prevent legal recourse by us. Enforcing a claim that a party illegally obtained and is using trade secrets licensed to us or that we own is difficult, expensive and time consuming, and the outcome is unpredictable. In the United States, trade secret violations are both a matter of federal law and state law, and the criteria for protection of trade secrets under state law can vary among different jurisdictions. Courts outside the United States may be less willing to protect trade secrets or unpatented proprietary technology. Costly and time-consuming litigation could be necessary to enforce and determine the scope of our proprietary rights, and failure to obtain or maintain trade secret protection could adversely affect our competitive business position.

Third parties may assert that our employees or consultants have wrongfully used or disclosed confidential information or misappropriated trade secrets

We employ individuals who previously worked with other companies, including our competitors. Although we try to ensure that our employees and consultants do not use the proprietary information or know-how of others in their work for us, we may be subject to claims that we or our employees, consultants or independent contractors have inadvertently or otherwise used or disclosed intellectual property, including trade secrets or other proprietary information, of a former employer or other third party. Litigation may be necessary to defend against these claims. If we fail in defending any such claims or settling those claims, in addition to paying monetary damages or a settlement payment, we may be subject to an injunction and lose valuable intellectual property rights or personnel. Even if we are successful in defending against such claims, litigation could result in substantial costs and be a distraction to management and other employees.

We may be involved in litigation or other proceedings relating to patent, trade secret and other intellectual property rights, which could cause substantial costs and liability

There may be patents and patent applications owned by our competitors, which, if determined to be valid and enforceable, may be infringed by us. We do not always conduct independent reviews of patents issued to third parties. Holders of certain patents may contact us and request we enter into license agreements for the underlying technology and pay them royalties, which could be substantial. If we need to obtain a license to use any intellectual property, we may be unable to obtain these licenses on favorable terms or at all or we may be required to make substantial royalty or other payments to use this intellectual property. Litigation concerning patents, trade secret and proprietary rights is time-consuming, expensive and unpredictable, and could divert the attention of our management from our business operations. Patent applications in the United States and elsewhere can be pending for many years before issuance, or unintentionally abandoned patents or applications can be revived, so there may be applications of others now pending or recently revived patents of which we are unaware. Patent applications in the United States, Europe and elsewhere are published approximately 18 months after the earliest filing for which priority is claimed, with such earliest filing date being commonly referred to as the priority date. These applications that later result in issued patents, or the revival of previously abandoned patents, may prevent, limit or otherwise interfere with our ability to develop and market our products. Third parties may assert claims that we are employing their proprietary technology without authorization, including claims from competitors or from non-practicing entities that have no relevant product revenue and against whom our own patent portfolio may have no deterrent effect.

As we continue to commercialize our technology and products in their current or updated forms, launch new technologies and products and enter new markets, we expect competitors may claim that one or more of our technology or products infringe their intellectual property rights as a strategy to impede our commercialization and entry into new markets. The large number of patent issuances, the rapid rate of new patent application filings, the complexities of the technologies involved, and the uncertainty of litigation may increase the risk to our business and result in business resources and management's attention being diverted to patent litigation. An adverse ruling in a patent litigation could subject us to significant liability, require us to seek licenses, and restrict our ability to commercialize our technology or manufacture and sell our products. Some of our competitors may be able to sustain the costs of complex patent litigation more effectively than we can because they have substantially greater resources.

Additionally, we may become party to adversarial proceedings regarding our or third-party patent portfolios. Such proceedings could include supplemental examination or contested post-grant proceedings such as post-grant review, reexamination, *inter partes* review, interference or derivation proceedings before the USPTO, and challenges in U.S. District Courts. Patents may be subjected to opposition, post-grant review or comparable proceedings lodged in various foreign, both national and regional, patent offices. The legal threshold for initiating litigation or contested proceedings may be low, so that even lawsuits or proceedings with a low probability of success might be initiated. Litigation and contested proceedings can also be expensive and time-consuming, and our adversaries in these proceedings may have the ability to dedicate substantially greater resources to prosecuting these legal actions than we can. We may also occasionally use these proceedings to challenge the patent rights of others. We cannot be certain that any particular challenge will be successful in limiting or eliminating the challenged patent rights of the third party.

An unfavorable outcome in abovementioned lawsuits and proceedings could require us to pay substantial damages, to lose our patent protection, to cease using the technology or to license rights, potentially at a substantial cost, from prevailing third parties. There is no guarantee that any prevailing party would offer us a license or that we could acquire any license on commercially acceptable terms. Even if we can obtain rights to a third-party's intellectual property, those rights may be non-exclusive, and therefore our competitors may obtain access to the same intellectual property. Ultimately, we may have to cease some of our business operations because of infringement claims, which could severely harm our business. To the extent we are found to be infringing on the intellectual property rights of others, we may not develop or otherwise obtain alternative technology. If we need to redesign our products to avoid third-party intellectual property rights, we may suffer significant regulatory delays associated with conducting additional studies or submitting technical, manufacturing or other information related to any redesigned product and, ultimately, in obtaining regulatory approval. Further, any such redesigns may result in less effective or less commercially desirable products or both.

Even if we were ultimately to prevail, any of these events could require us to divert substantial financial and management resources that we would otherwise be able to devote to our business. Intellectual property litigation, regardless of its outcome, may cause negative publicity, adversely impact prospective customers, cause product shipment delays, or prohibit us from manufacturing, importing, marketing or otherwise commercializing our products and technology. In addition, if the breadth or strength of protection provided by the patents and patent applications we own or in-license is threatened, it could dissuade companies from collaborating with us to license, develop or commercialize current or future technology or products. In addition, because of the substantial amount of discovery required in connection with intellectual property litigation, there is a risk that some of our confidential information could be compromised by disclosure during this type of litigation. There could also be public announcements of the results of hearings, motions or other interim proceedings or developments, and if securities analysts or investors view these announcements in a negative light, the price of our common stock could be adversely affected.

Lastly, we may need to indemnify our customers, licensees, commercialization partners, and distributors with respect to infringement by our technology or products of the intellectual property rights of third parties. Third parties may assert infringement claims against our customers, licensees, commercialization partners, or distributors based on our technology or products. These claims may require us to initiate or defend protracted and costly litigation on behalf of our customers, licensees, commercialization partners, or distributors, regardless of the merits of these claims. If any of these claims succeed or settle, we may be forced to pay damages or settlement payments on behalf of our customers, licensees, commercialization partners, or distributors or may be required to obtain licenses for the technology or products they use. If we cannot obtain all necessary licenses on commercially reasonable terms, our customers, licensees, commercialization partners, or distributors may be forced to stop using or selling our products or technology.

Patents covering our technology or products could be found invalid or unenforceable if challenged in court or before administrative bodies in the United States or abroad

The issuance of a patent is not conclusive as to its inventorship, scope, validity or enforceability, and our patents may be challenged in the courts or patent offices in the United States and abroad. We may be subject to a third-party pre-issuance submission of prior art to the USPTO, or become involved in opposition, derivation, revocation, reexamination, post-grant and *inter partes* review, or interference proceedings or other similar proceedings challenging our patent rights. An adverse determination in any such submission, proceeding or litigation could reduce the scope of, or invalidate or render unenforceable, our patent rights, allow third parties to commercialize our technology or products and compete directly with us, without payment to us, or result in our inability to manufacture or commercialize products without infringing third-party patent rights if patent rights are awarded to third parties instead of to us. Moreover, we may have to participate in interference proceedings declared by the USPTO to determine priority of invention or in post-grant challenge proceedings, such as oppositions in a foreign patent office, that challenge our priority of invention or other features of patentability with respect to our patents and patent applications. Such challenges may result in loss of patent rights, in loss of exclusivity or in patent claims being narrowed, invalidated or held unenforceable, which could limit our ability to stop others from using or commercializing similar or identical technology and products, or limit the duration of the patent protection of our technology or products. Such proceedings also may result in substantial cost and require significant time from our scientists and management, even if the eventual outcome is favorable to us. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

In addition, if we initiate legal proceedings against a third party to enforce a patent we own covering the third party's competing products, the defendant could counterclaim that such patent is invalid or unenforceable. In patent litigation in the United States, defendant counterclaims alleging invalidity or unenforceability are commonplace. Grounds for a validity challenge could be an alleged failure to meet any of several statutory requirements, including lack of novelty, obviousness or non-enablement. Grounds for an unenforceability assertion could be an allegation that someone connected with prosecution of the patent withheld relevant information from the USPTO or made a misleading statement during prosecution. Third parties may also raise claims challenging the validity or enforceability of our patents before administrative bodies in the United States or abroad, even outside the context of litigation, including through re-examination, post-grant review, *inter partes* review, interference proceedings, derivation proceedings and equivalent proceedings in foreign jurisdictions (*e.g.*, opposition proceedings). Such proceedings could result in the revocation of, cancellation of or amendment to our patents in such a way that they no longer cover our products. The outcome following legal assertions of invalidity and unenforceability is unpredictable. With respect to the validity question, for example, we cannot be certain that there is no invalidating prior art, of which we and the patent examiner were unaware during prosecution. If a third party were to prevail on a legal assertion of invalidity or unenforceability, we would lose at least part, and perhaps all, of the patent protection on the applicable product(s). Such a loss of patent protection would have a material adverse effect on our business, financial condition and results of operations.

Obtaining and maintaining our patent protection depends on compliance with various procedural, document submission, fee payment and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements

Obtaining and maintaining our patent protection depends on compliance with various procedural measures, document submissions, fee payments and other requirements imposed by government patent agencies, and our patent protection could be reduced or eliminated for non-compliance with these requirements.

Periodic maintenance fees, renewal fees, annuity fees and various other government fees on patents and applications will be due to be paid to the USPTO and various government patent agencies outside of the United States over the lifetime of our patents and applications. The USPTO and various non-U.S. government agencies require compliance with several procedural, documentary, fee payment and other similar provisions during the patent application process. In some cases, an inadvertent lapse can be cured by payment of a late fee or by other means in accordance with the applicable rules. There are situations, however, in which non-compliance can result in the abandonment or lapse of the patent or patent application, resulting in a partial or complete loss of patent rights in the relevant jurisdiction. In such an event, potential competitors might be able to enter the market with similar or identical products or technology, which could have a material adverse effect on our business, financial condition and results of operations.

Changes in U.S. patent law could diminish the value of patents in general, thereby impairing our ability to protect our products

Changes in either the patent laws or interpretation of the patent laws in the United States could increase the uncertainties and costs surrounding the prosecution of patent applications and the enforcement or defense of issued patents. Assuming that other requirements for patentability are met, prior to March 2013, in the United States, the first to invent the claimed invention was entitled to the patent, while outside the United States, the first to file a patent application was entitled to the patent. After March 2013, under the Leahy-Smith America Invents Act (the "America Invents Act"), enacted in September 2011, the United States transitioned to a first inventor to file system in which, assuming that other requirements for patentability are met, the first inventor to file a patent application will be entitled to the patent on an invention regardless of whether a third party was the first to invent the claimed invention. A third party that files a patent application in the USPTO after March 2013, but before us could therefore be awarded a patent covering an invention of ours even if we had made the invention before it was made by such third party. This will require us to be cognizant of the time from invention to filing of a patent application. Since patent applications in the United States and most other countries are confidential for a period of time after filing or until issuance, we cannot be certain that we were the first to file any patent application related to our products or invent any of the inventions claimed in our patents or patent applications.

The America Invents Act also includes a number of significant changes that affect the way patent applications will be prosecuted and also may affect patent litigation. These include allowing third-party submission of prior art to the USPTO during patent prosecution and additional procedures to attack the validity of a patent by USPTO administered post-grant proceedings, including post-grant review, *inter partes* review and derivation proceedings. Because of a lower evidentiary standard in USPTO proceedings compared to the evidentiary standard in U.S. federal courts necessary to invalidate a patent claim, a third party could potentially provide evidence in a USPTO proceeding sufficient for the USPTO to hold a claim invalid even though the same evidence would be insufficient to invalidate the claim if first presented in a district court action. Accordingly, a third party may attempt to use the USPTO procedures to invalidate our patent claims that would not have been invalidated if first challenged by the third party as a defendant in a district court action. Therefore, the America Invents Act and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. Future actions by the U.S. Congress, the federal courts and the USPTO could cause the laws and regulations governing patents to change in unpredictable ways. Any of the foregoing could have a material adverse effect on our business, financial condition and results of operations.

We may be subject to claims challenging the ownership or inventorship of our patents and other intellectual property and, if unsuccessful in any of these proceedings, we may be required to obtain licenses from third parties, which may not be available on commercially reasonable terms, or at all, or to cease the development, manufacture and commercialization of one or more of our products

We may be subject to claims that current or former employees, collaborators or other third parties have an interest in our patents, trade secrets or other intellectual property as an inventor or co-inventor. For example, we may have inventorship disputes arise from conflicting obligations of employees, consultants or others who are involved in developing our products. Litigation may be necessary to defend against these and other claims challenging inventorship of our patents, trade secrets or other intellectual property. If we fail in defending any such claims, in addition to paying monetary damages, we may lose valuable intellectual property rights, such as exclusive ownership of, or right to use, intellectual property that is important to our products. If we were to jointly own such intellectual property with other owners, other owners may be able to license their rights to other third parties, including our competitors. We also may be required to obtain and maintain licenses from third parties, including parties involved in any such disputes. Such licenses may not be available on commercially reasonable terms, or at all, or may be non-exclusive. If we are in breach of any license agreements granted to us, such licenses may terminate. If we are unable to obtain and maintain such licenses, we may need to cease the development, manufacture and commercialization of one or more of our products.

Patent terms may be inadequate to protect our competitive position on our product candidates for an adequate amount of time

The term of any individual patent depends on applicable law in the country where the patent is granted. In the United States, provided all maintenance fees are timely paid, a patent generally has a term of 20 years from its application filing date or earliest claimed non-provisional filing date. Extensions may be available under certain circumstances, but the life of a patent and, correspondingly, the protection it affords is limited. Even if we or our licensors obtain patents covering our products, when the terms of all patents covering a product expire, our business may become subject to competition from products identical or similar to ours which can be sold without infringing our patents. As a result, our owned and licensed patent portfolio may not provide us with sufficient rights to exclude others from commercializing products similar or identical to ours.

We may be unable to acquire patent term extension in the United States under the Hatch-Waxman Act and in foreign countries under similar legislation

In the United States, a patent that covers a medical device approved by the FDA may be eligible for a term extension designed to restore the period of the patent term that is lost during the pre-market regulatory review process conducted by the FDA. Depending upon the timing, duration and conditions of FDA marketing approval of our products, one or more of our U.S. patents may be eligible for limited patent term extension under the Drug Price Competition and Patent Term Restoration Act of 1984 (the "Hatch-Waxman Act"), which permits a patent term extension of up to five years for a patent covering an approved product as compensation for effective patent term lost during product development and the FDA regulatory review process. A patent term extension cannot extend the remaining term of a patent beyond a total of 14 years from the date of product approval, and only claims covering such approved drug product, a method for using it or a method for manufacturing it may be extended. In the EU, our product candidates may be eligible for term extensions based on similar legislation. In either jurisdiction, however, we may not receive an extension if we fail to apply within applicable deadlines, fail to apply prior to expiration of relevant patents or otherwise fail to satisfy applicable requirements. Even if we are granted such extension, the duration of such extension may be less than our request. If we are unable to obtain a patent term extension, or if the term of any such extension is less than our request, the period during which we can enforce our patent rights for that product will be in effect shortened and our competitors may obtain approval to market competing products sooner. The resulting reduction of years of revenue from applicable products could be substantial.

We may need to obtain intellectual property rights from third parties, and may not be successful in obtaining necessary rights to develop any future product through acquisitions and in-licenses

We may find it necessary or prudent to obtain licenses from third-party intellectual property holders to advance our research or to allow commercialization of our products, and we cannot provide any assurances that third-party intellectual property rights do not exist which might be enforced against our products in the absence of such a license. In addition, with respect to any patents we may in the future co-own with third parties, we may wish to acquire exclusive licenses to such co-owners' interest to such patents. However, we may be unable to secure such licenses or otherwise acquire or in-license any intellectual property rights from third parties that we identify as necessary for planned or future products. The licensing or acquisition of third-party intellectual property rights is a competitive area, and more established companies may pursue strategies to license or acquire third-party intellectual property rights that we may consider attractive or necessary. These established companies may have a competitive advantage over us due to their size, capital resources and greater clinical development and commercialization capabilities. In addition, companies that perceive us to be a competitor may be unwilling to assign or license rights to us. We also may be unable to license or acquire third-party intellectual property rights on terms that would allow us to make an appropriate return on our investment or at all. If we are unable to successfully obtain rights to required third-party intellectual property rights or maintain the existing intellectual property licenses we have, we may have to abandon development of the relevant products, which could have a material adverse effect on our business, financial condition and results of operations.

If our trademarks and trade names are not adequately protected, then we may not be able to build name recognition in our markets of interest and our business may be adversely affected

Our trademarks or trade names may be challenged, infringed, circumvented, declared generic or determined to be violating or infringing other marks. We may not be able to protect our rights to these trademarks and trade names, which we need to build name recognition among potential partners and customers in our markets of interest. At times, competitors or other third parties may adopt trade names or trademarks similar to ours, thereby impeding our ability to build brand identity and possibly leading to market confusion. In addition, there could be potential trade name or trademark infringement or dilution claims brought by owners of other trademarks. Over the long term, if we are unable to establish name recognition based on our trademarks and trade names, then we may not be able to compete effectively and our business may be adversely affected. Our efforts to enforce or protect our proprietary rights related to trademarks, domain names or other similar intellectual property may be ineffective, could result in substantial costs and diversion of resources and could adversely affect our business, financial condition and results of operations.

Risks Related to Ownership of our Common Stock

Stockholder litigation and regulatory inquiries and investigations are expensive and could harm our business, financial condition and operating results and could divert management attention

In the past, securities class action litigation and/or stockholder derivative litigation and inquiries or investigations by regulatory authorities have often followed significant business transactions, such as the sale of a company or announcement of any other strategic transaction, such as the Business Combination. Any stockholder litigation and/or regulatory investigations against us, whether or not resolved favorably, could result in substantial costs and divert management's attention from other business concerns, which could adversely affect our business and cash resources.

Anti-takeover provisions contained in our charter and our bylaws and under Delaware law could impair a takeover attempt

Certain provisions of Delaware law, as well as provisions in our charter and our bylaws, may discourage unsolicited takeover proposals that stockholders may consider to be in their best interests. These provisions may make it more difficult to remove management and may discourage transactions that otherwise could involve payment of a premium over prevailing market prices for our securities. Among other things, these provisions:

- allow our board of directors (the "Board") to authorize the issuance of undesignated preferred stock, the terms of which may be established and the shares of which may be issued without stockholder approval, and which may include supermajority voting, special approval, dividend, or other rights or preferences superior to the rights of other stockholders;
- provide for a classified board of directors with staggered three-year terms;
- provide that directors may only be removed for cause, and only by the affirmative vote of shares representing a majority of the shares entitled to vote at an election of directors;
- prohibit stockholder action by written consent;
- provide that special meetings may only be called by the Chairperson of the Board, the Chief Executive Officer or a majority of the directors;
- provide that we may indemnify our directors and officers, in each case to the fullest extent permitted by Delaware law;
- provide that any adoption, amendment or repeal of any provision of the bylaws by our stockholders will require the affirmative vote of the holders of at least 66 2/3% of the voting power of all of the then-outstanding shares of our capital stock entitled to vote generally in the election of directors, voting together as a single class; and
- establish advance notice requirements for nominations for elections to the Board and for proposing matters that can be acted upon by stockholders at stockholder meetings.

Our charter provides that the Court of Chancery of the State of Delaware and the federal district courts of the United States will be the exclusive forums for certain disputes between us and our stockholders, which could make our securities less attractive and impose legal costs on us if such limitations are challenged

Our charter provides that, unless we otherwise consent in writing, the Court of Chancery of the State of Delaware (or, in the event that the Court of Chancery of the State of Delaware lacks subject matter jurisdiction, another state or federal court located within the State of Delaware) is, to the fullest extent permitted by law, the sole and exclusive forum for any:

- derivative action or proceeding brought on our behalf,
- action, suit or proceeding asserting a claim of breach of a fiduciary duty owed by any of our directors, officers or stockholders to us or to our stockholders,
- action, suit or proceeding arising pursuant to any provision of the Delaware General Corporation Law, our charter or our bylaws, and
- action, suit or proceeding asserting a claim against us governed by the internal affairs doctrine.

This exclusive forum provision would not apply to suits brought to enforce a duty or liability vested in the exclusive jurisdiction of a court or forum other than the Court of Chancery, such as those created by the Exchange Act or any other claim for which the federal courts have exclusive jurisdiction, or the Securities Act. In addition, to prevent having to litigate claims in multiple jurisdictions and the threat of inconsistent or contrary rulings by different courts, among other considerations, our charter provides that, unless we consent in writing to the selection of an alternative forum, to the fullest extent permitted by law, the federal district courts of the United States will be the exclusive forum for resolving any complaint asserting a cause of action arising under the Securities Act. However, Section 22 of the Securities Act creates concurrent jurisdiction for federal and state courts over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder. Accordingly, both state and federal courts have jurisdiction to entertain such claims. As noted above, our charter provides that the federal district courts of the United States will be the exclusive forum for the resolution of any complaint asserting a cause of action under the Securities Act. Due to the concurrent jurisdiction for federal and state courts created by Section 22 of the Securities Act over all suits brought to enforce any duty or liability created by the Securities Act or the rules and regulations thereunder, there is uncertainty as to whether a court would enforce the exclusive form provision. Our charter further provides that any person or entity purchasing or otherwise acquiring any interest in our securities shall be deemed to have notice of and to have consented to these provisions. Investors also cannot waive compliance with the federal securities laws and the rules and regulations thereunder.

These exclusive forum provisions may limit a stockholder's ability to bring a claim in a judicial forum that it finds favorable for disputes with us or our directors, officers, or other employees and this limitation may make our securities less attractive to investors. Further, while the Delaware courts have determined that such choice of forum provisions are facially valid, a stockholder may nevertheless seek to bring such a claim arising under the Securities Act against us or our directors, officers, or other employees in a venue other than in the federal district courts of the United States. In such instance, we would expect to vigorously assert the validity and enforceability of the exclusive forum provisions of our charter. This may require significant additional costs associated with resolving such action in other jurisdictions and we cannot assure you that the provisions will be enforced by a court in those other jurisdictions. If a court were to find either exclusive-forum provision in our charter to be inapplicable or unenforceable in an action, it may incur further significant additional costs associated with resolving the dispute in other jurisdictions, all of which could harm our business.

The price of our securities may be volatile

Fluctuations in the price of our securities could contribute to the loss of all or part of your investment. The trading price of our securities has experienced volatility since the closing of the Business Combination and may continue to experience volatility in the future and is subject to wide fluctuations in response to various factors, some of which are beyond our control. Any of such factors, including the factors listed below, could have a material adverse effect on your investment in our securities and our securities may trade at prices significantly below the price you paid. In such circumstances, the trading price of our securities may not recover and may experience a further decline.

Factors affecting the trading price of our securities may include:

- actual or anticipated fluctuations in our quarterly financial results or the quarterly financial results of companies perceived to be similar to us;
- changes in the market's expectations about our operating results;
- the inability to maintain our listing on Nasdaq;
- our operating results failing to meet the expectation of securities analysts or investors in a particular period;
- changes in financial estimates and recommendations by securities analysts concerning us or the market in general;
- operating and stock price performance of other companies that investors deem comparable to us;
- our ability to develop product candidates;
- changes in laws and regulations affecting our business;
- litigation involving us;
- changes in our capital structure, such as future issuances of securities or the incurrence of additional debt;
- the volume of our securities available for public sale;
- any major change in our Board or management;
- sales of our securities by directors, executive officers or significant stockholders, or the perception that such sales could occur; and
- general economic and political conditions such as recessions, interest rates, fuel prices, international currency fluctuations and acts of war or terrorism.

Broad market and industry factors may materially harm the market price of our securities irrespective of our operating performance. The stock market in general and Nasdaq in particular have experienced price and volume fluctuations that have often been unrelated or disproportionate to the operating performance of the particular companies affected. The trading prices and valuations of these stocks, and of our securities, may not be predictable. A loss of investor confidence in the market for medical device company stocks or the stocks of other companies which investors perceive to be similar to us could depress our stock price regardless of our business, prospects, financial conditions or results of operations. A decline in the market price of our securities also could adversely affect our ability to issue additional securities and our ability to obtain additional financing in the future.

Moreover, in the past, securities class action litigation has often been brought against a company following a decline in the market price of its securities. If we face such litigation, it could result in substantial costs and a diversion of management's attention and resources, which could harm our business.

Our ability to timely raise capital in the future may be limited, or may be unavailable on acceptable terms, if at all. The failure to raise capital when needed could harm our business, operating results and financial condition. Debt or equity issued to raise additional capital may reduce the value of our common stock

We cannot be certain when or if our operations will generate sufficient cash to fund our ongoing operations or the growth of our business. We intend to make investments to support our current business and may require additional funds to respond to business challenges. Additional financing may not be available on favorable terms, if at all. If adequate funds are not available on acceptable terms, we may be unable to invest in our future growth opportunities, which could harm our business, operating results and financial condition. If we incur debt, the debt holders could have rights senior to holders of our common stock to make claims on our assets. The terms of any debt could restrict our operations, including our ability to pay dividends on our common stock. If we issue additional equity securities in the future, our stockholders will experience dilution, and the new equity securities could have rights senior to those of our common stock. Because the decision to issue securities in the future will depend on numerous considerations, including factors beyond our control, we cannot predict or estimate the amount, timing or nature of any future issuances of debt or equity securities. As a result, stockholders will bear the risk of future issuances of debt or equity securities reducing the value of their common stock and diluting their interest.

The future sales, or the perception of future sales, of shares by existing stockholders and future exercise of registration rights may adversely affect the market price of our common stock

Sales of a substantial number of shares of our common stock in the public market could occur at any time. If our existing stockholders sell substantial amounts of common stock in the public market, or the market perceives that they intend to do so, the market price of our common stock could decline.

The holders of an aggregate of 22,718,904 shares of common stock (including 1,656,369 shares underlying warrants) are entitled to registration rights under the Amended and Restated Registration Rights Agreement entered into in connection with the closing of the Business Combination. The holders of a majority of these securities are entitled to demand that we register such securities. In addition, the holders have certain "piggy-back" registration rights with respect to registration statements we file. We will bear the expenses incurred in connection with the filing of any such registration statements. The presence of these additional shares trading in the public market may have an adverse effect on the market price of our securities.

Many of our existing stockholders are currently subject to lock-up provisions that restrict their ability to transfer certain of their shares of our common stock or any security convertible into or exercisable or exchange for our common stock until between 180 days after the time that the Merger became effective and one year after the closing of the Business Combination, subject to certain exceptions. As the restrictions on resale end, the market price of shares of our common stock could drop significantly if the holders of these shares of common stock sell them or are perceived by the market as intending to sell them. These factors could also make it more difficult for us to raise additional funds through future offerings of our shares of common stock or other securities.

Our failure to meet Nasdaq's continued listing requirements could result in a delisting of our common stock

If we fail to satisfy Nasdaq's continued listing requirements, such as the corporate governance requirements or the minimum closing bid price requirement, Nasdaq may take steps to delist our common stock. Such a delisting would likely have a negative effect on the price of our common stock and would impair a stockholder's ability to sell or purchase our common stock when a stockholder wishes to do so. In the event of a delisting, we can provide no assurance that any action taken by us to restore compliance with listing requirements would allow our common stock to become listed again, stabilize the market price or improve the liquidity of our common stock, prevent our common stock from dropping below the Nasdaq minimum bid price requirement or prevent future non-compliance with Nasdaq's listing requirements.

If securities or industry analysts do not publish or cease publishing research or reports about us, our business, or our market, or if they change their recommendations regarding our securities adversely, the price and trading volume of our securities could decline

The trading market for our securities will be influenced by the research and reports that industry or securities analysts may publish about us, our business, our market, or our competitors. If any of the analysts who cover us change their recommendation regarding our common stock adversely, or provide more favorable relative recommendations about our competitors, the price of our securities would likely decline. If any analyst who covers or may cover us were to cease coverage or fail to regularly publish reports on us, we could lose visibility in the financial markets, which could cause our stock price or trading volume to decline.

Because we do not anticipate paying any cash dividends in the foreseeable future, capital appreciation, if any, would be your sole source of gain

We currently anticipate that we will retain future earnings for the development, operation and expansion of our business and do not anticipate declaring or paying any cash dividends for the foreseeable future. Any future determination to pay dividends will be made at the discretion of our Board, subject to applicable laws. It will depend on a number of factors, including our financial condition, results of operations, capital requirements, contractual, legal, tax and regulatory restrictions, general business conditions, and other factors that our Board may deem relevant. In addition, the ability to pay cash dividends may be restricted by the terms of debt financing arrangements, as any future debt financing arrangement likely will contain terms restricting or limiting the amount of dividends that may be declared or paid on our securities. As a result, capital appreciation, if any, of our securities would be your sole source of gain on an investment in such securities for the foreseeable future.

It may be more difficult to compare our performance to that of other public companies and our securities may be less attractive to investors if we take advantage of exemptions from disclosure requirements that are available to an "emerging growth company"

We qualify as an "emerging growth company" as defined in Section 2(a)(19) of the Securities Act, as modified by the JOBS Act. As such, we are eligible for certain exemptions available to emerging growth companies from various reporting requirements applicable to other public companies that are not emerging growth companies. We intend to take advantage of those exemptions for as long as we continue to be an emerging growth company. We will remain an emerging growth company until the earliest of (i) the last day of the fiscal year in which the market value of our common stock that is held by non-affiliates exceeds $700 million as of June 30 of that fiscal year, (ii) the last day of the fiscal year in which we have total annual gross revenue of $1.235 billion or more during such fiscal year (as indexed for inflation), (iii) the date on which we have issued more than $1 billion in non-convertible debt in the prior three-year period or (iv) the last day of the fiscal year following the fifth anniversary of the date of the first sale of shares by our predecessor in its initial public offering.

The exemptions available to emerging growth companies include: (a) exemption from the auditor attestation requirements with respect to internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act, (b) exemptions from say-on-pay, say-on-frequency and say-on-golden parachute voting requirements and (c) reduced disclosure obligations regarding executive compensation in its periodic reports and proxy statements. In addition, Section 107 of the JOBS Act also provides that an emerging growth company can take advantage of the exemption from complying with new or revised accounting standards provided in Section 7(a)(2)(B) of the Securities Act as long as we are an emerging growth company. An emerging growth company can therefore delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected not to opt out of such extended transition period and, therefore, we may not be subject to the same new or revised accounting standards as other public companies that are not emerging growth companies. This may make it more difficult to compare our performance to that of other public companies which could make our securities less attractive, which may result in a less active and more volatile trading market for our securities.

We may not be able to timely and effectively implement controls and procedures required by Section 404 of the Sarbanes-Oxley Act of 2002, which could have a material adverse effect on our business

Pursuant to Section 404 of the Sarbanes-Oxley Act of 2002 (the "Sarbanes-Oxley Act"), and in light of SEC guidance, management is required to report our assessment of internal control over financial reporting beginning with coverage of the first full fiscal year following the Business Combination (in our case, the fiscal year ending December 31, 2024), and if and when we become an accelerated filer or large accelerated filer who is not eligible to be a smaller reporting company and has annual revenues of at least $100.0 million (and cease to be an emerging growth company), an attestation of the independent registered public accounting firm will also be required. The rules governing the standards that must be met for management to assess internal control over financial reporting are complex and require significant documentation, testing and possible remediation. To comply with the Sarbanes-Oxley Act, the requirements of being a reporting company under the Exchange Act and any complex accounting rules in the future, we may need to upgrade our legacy information technology systems, implement additional financial and management controls, reporting systems and procedures, and hire additional accounting and finance staff or retain additional outside consultants.

If we are unable to implement the additional requirements of Section 404 in a timely manner or with adequate compliance, we may not be able to assess whether our internal control over financial reporting are effective, which may subject us to adverse regulatory consequences and could harm investor confidence and lead to a decrease in the market price of our securities. We could become subject to investigations by Nasdaq, the SEC or other regulatory authorities, which could require additional financial and management resources.

We will incur significant increased expenses and administrative burdens as a public company, which could negatively impact our business, financial condition and results of operations

We face increased legal, accounting, administrative and other costs and expenses as a public company. These increased costs require us to divert a significant amount of money and management attention that could otherwise be used to expand the business and achieve strategic objectives.

There are significant financial costs and expenses for complying with the Sarbanes-Oxley Act, including the requirements of Section 404, as well as rules and regulations of the SEC, the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010 and the rules and regulations thereunder, rules and regulations of the Public Company Accounting Oversight Board ("PCAOB") and the securities exchanges. Compliance with public company requirements increase costs and make regulated activities more time-consuming. Advocacy efforts by stockholders and third parties may also prompt additional changes in governance and reporting requirements, which could further increase costs and administrative burdens. In order to comply with these requirements, we carry out activities that Legacy Orchestra had not done previously. For example, we will create and adopt new internal controls and disclosure controls and procedures, all of which will increase expenses and administrative burdens. In addition, we have new expenses associated with SEC reporting requirements.

Furthermore, if any issues in complying with those requirements are identified (for example, if the auditors identify a material weakness or significant deficiency in the internal control over financial reporting), we could incur further additional costs to rectify those issues. It may also be more expensive to obtain director and officer liability insurance. Risks associated with our status as a public company may make it more difficult to attract and retain qualified persons to serve on our Board or as executive officers. The additional reporting and other obligations imposed by these rules and regulations increase legal and financial compliance costs and the costs of related legal, accounting and administrative activities. These increased costs require us to divert a significant amount of money that could otherwise be used to expand the business and achieve strategic objectives.

Changes in laws or regulations, or a failure to comply with any laws and regulations, may adversely affect our business, investments and results of operations

We are subject to laws and regulations enacted by national, regional and local governments. In particular, we are required to comply with certain SEC and other legal requirements. Compliance with, and monitoring of, applicable laws and regulations may be difficult, time consuming and costly. Those laws and regulations and their interpretation and application may also change from time to time and those changes could have a material adverse effect on our business, investments and results of operations. In addition, a failure to comply with applicable laws or regulations, as interpreted and applied, could have a material adverse effect on our business and results of operations.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds.

Pursuant to the terms of the Merger Agreement, immediately following the Sponsor Forfeiture and prior to the Closing of the Business Combination, HSAC2 issued 750,000 warrants to purchase shares of our common stock to eleven specified employees and directors of Legacy Orchestra for no consideration in a transaction not involving any public offering under Section 4(a)(2) of the Securities Act.

Item 3. Defaults Upon Senior Securities.

None.

Item 4. Mine Safety Disclosures.

Not applicable.

Item 5. Other Information.

None.

Item 6. Exhibits.

Exhibit	Description
3.1	Certificate of Incorporation of Orchestra BioMed Holdings, Inc. (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
3.2	Bylaws of Orchestra BioMed Holdings, Inc. (incorporated by reference to Exhibit 3.2 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
4.1	Form of Common Stock Warrant issued January 26, 2023 pursuant to the Parent Support Agreement (incorporated by reference to Exhibit 4.16 of HSAC2's Form S-4 (File No. 333-266660)).
4.2	Amended & Restated Warrant issued to HSAC 2 Holdings, LLC, dated January 25, 2023 (incorporated by reference to Exhibit 4.14 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.1	Amended and Restated Registration Rights and Lock-Up Agreement, dated January 26, 2023, by and among Health Sciences Acquisitions Corporation 2, equityholders thereof and certain stockholders of Orchestra BioMed, Inc. (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.2†	Orchestra BioMed Holdings, Inc. 2023 Equity Incentive Plan (incorporated by reference to Exhibit 10.7 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.3†	Form of Stock Option Grant Notice and Stock Option Agreement under the Orchestra BioMed Holdings, Inc. 2023 Equity Incentive Plan (incorporated by reference to Exhibit 10.8 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.4†	Form of Restricted Stock Unit Award Grant Notice and Restricted Stock Unit Award Agreement under the Orchestra BioMed Holdings, Inc. 2023 Equity Incentive Plan (incorporated by reference to Exhibit 10.9 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.5†#	Employment Agreement, by and between Orchestra BioMed Holdings, Inc. and David P. Hochman, dated January 26, 2023 (incorporated by reference to Exhibit 10.19 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
10.6†#	Employment Agreement, by and between Orchestra BioMed Holdings, Inc. and Darren R. Sherman, dated January 26, 2023 (incorporated by reference to Exhibit 10.20 to the Current Report on Form 8-K filed with the SEC on January 31, 2023).
31.1+	Certification of Chief Executive Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2+	Certification of Chief Financial Officer, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1+*	Certification of Chief Executive Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2+*	Certification of Chief Financial Officer, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	Inline XBRL Instance Document.
101.SCH	Inline XBRL Taxonomy Extension Schema Document.
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document.
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document.
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document.
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document.
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101).

\+ Filed herewith.

† Indicates a management contract or compensatory plan.

\# Certain of the exhibits and schedules to this Exhibit have been omitted in accordance with Regulation S-K Item 601. The Registrant agrees to furnish a copy of all omitted exhibits and schedules to the SEC upon its request.

* This exhibit shall not be deemed "filed" for purposes of Section 18 of the Exchange Act or otherwise subject to the liability of that Section. Such exhibit shall not be deemed incorporated into any filing under the Securities Act or the Exchange Act.

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 thereunto duly authorized.

ORCHESTRA BIOMED HOLDINGS, INC.

Dated: May 12, 2023

/s/ Michael D. Kaswan

Michael D. Kaswan
Chief Financial Officer
(Principal Financial Officer)

Exhibit 31.1

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, David P. Hochman, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Orchestra BioMed Holdings, Inc.;

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

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

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

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

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

Dated: May 12, 2023

/s/ David P. Hochman
David P. Hochman
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael D. Kaswan, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Orchestra BioMed Holdings, Inc.;

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

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

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

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

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

Dated: May 12, 2023

/s/ Michael D. Kaswan
Michael D. Kaswan
Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. §1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Orchestra BioMed Holdings, Inc. (the "Company") on Form 10-Q for the period ended March 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, David P. Hochman, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(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 this Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 12, 2023

/s/ David P. Hochman
David P. Hochman
Chief Executive Officer
(Principal Executive Officer)

A signed original of this written statement required by Section 906 has been provided to Orchestra BioMed Holdings, Inc. and will be retained by Orchestra BioMed Holdings, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. §1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Quarterly Report of Orchestra BioMed Holdings, Inc. (the "Company") on Form 10-Q for the period ended March 31, 2023 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Michael D. Kaswan, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. §1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(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 this Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: May 12, 2023

/s/ Michael D. Kaswan
Michael D. Kaswan
Chief Financial Officer
(Principal Financial Officer)

A signed original of this written statement required by Section 906 has been provided to Orchestra BioMed Holdings, Inc. and will be retained by Orchestra BioMed Holdings, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.