
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION**
Washington, D.C. 20549

**FORM S-3
REGISTRATION STATEMENT
UNDER
THE SECURITIES ACT OF 1933**

SeaStar Medical Holding Corporation
(Exact Name of Registrant as Specified in Its Charter)

Delaware
(State or Other Jurisdiction of
Incorporation or Organization)

85-3681132
(I.R.S. Employer
Identification No.)

**3513 Brighton Blvd., Suite 410
Denver, CO 80216
(844) 427-8100**

(Address, Including Zip Code, and Telephone Number, Including Area Code, of Registrant's Principal Executive Offices)

**Eric Schlorff
Chief Executive Officer
3513 Brighton Blvd., Suite 410
Denver, CO 80216
(844) 427-8100**

(Name, Address, Including Zip Code, and Telephone Number, Including Area Code, of Agent for Service)

It is respectfully requested that the Commission also send copies of all notices, orders and communications to:

**Albert Lung, Esq.
Morgan, Lewis & Bockius LLP
1400 Page Mill Road
Palo Alto, California 94304
Tel: (650) 843-4000**

Approximate date of commencement of proposed sale to the public: From time to time after the effective date of this registration statement.

If any of the securities being registered on this Form are to be offered on a delayed or continuous basis pursuant to Rule 415 under the Securities Act of 1933, please check the following box.

If this Form is filed to register additional securities for an offering pursuant to Rule 462(b) under the Securities Act, please check the following box and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(c) under the Securities Act, check the following box, and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

If this Form is a post-effective amendment filed pursuant to Rule 462(d) under the Securities Act, check the following box, and list the Securities Act registration statement number of the earlier effective registration statement for the same offering.

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 under the Securities Exchange Act of 1934:

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

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 7(a)(2)(B) of the Securities Act.

The Registrant hereby amends this Registration Statement on such date or dates as may be necessary to delay its effective date until the Registrant shall file a further amendment which specifically states that this Registration Statement shall thereafter become effective in accordance with Section 8(a) of the Securities Act of 1933 or until the Registration Statement shall become effective on such date as the Commission, acting pursuant to said Section 8(a), may determine.

The information in this preliminary prospectus is not complete and may be changed. We may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This preliminary prospectus is not an offer to sell these securities and is not soliciting an offer to buy these securities in any jurisdiction where the offer or sale is not permitted.

SUBJECT TO COMPLETION — DATED DECEMBER 1, 2023

PRELIMINARY PROSPECTUS



Up to 18,183,659 Shares of Common Stock

Offered by the Selling Securityholder

This prospectus relates to the offer and resale, from time to time, of up to 18,183,659 additional shares of our common stock, \$0.0001 par value per share (the "Common Stock"), by 3i, LP ("3i" or the "Selling Securityholder").

The shares of Common Stock registered for resale under this prospectus underlie a series of senior unsecured convertible promissory notes (the "Notes") and warrants (the "Warrants," and collectively with the Notes, the "Securities") that have been and may be issued to the Selling Securityholder in a private placement pursuant to the terms of that certain securities purchase agreement dated March 15, 2023, that we entered into with the Selling Securityholder, as amended (the "SPA"). The Company previously registered an aggregate of 14,228,567 shares issuable upon conversion or exercise of the Securities in a registration on Form S-1 that became effective on April 26, 2023 (File No. 333-271215) (the "Form S-1"), which included: (i) 7,548,310 and 5,032,207 shares, respectively, that may be issued pursuant to the conversion of the principal amount of the Notes issued in connection with the first closing, occurring on March 15, 2023 (the "First Closing") and the second closing, occurring on May 12, 2023 (the "Second Closing"), (ii) 660,478 and 440,319 shares, respectively, that may be issued pursuant to the conversion of accrued interest over the term of the Notes issued in connection with the First Closing and the Second Closing, and (iii) 328,352 and 218,901 shares, respectively, that may be issued pursuant to the Warrants issued in connection with the First Closing and the Second Closing.

On August 7, 2023, the Company entered into that First Amendment to the SPA with 3i (the "SPA Amendment"), pursuant to which the provisions of the third and fourth closings in the SPA were amended so that the Selling Securityholder had discretion to purchase additional Securities in an aggregate principal amount of \$2 million, provided that the Selling Securityholder purchased such additional Securities in an aggregate principal amount of \$1 million in two tranches no later than September 5, 2023. On August 7, 2023, the Company closed the first tranche of this additional funding by issuing a Note with an initial conversion price of \$0.20, in a principal amount of \$543,478.26, and a Warrant to purchase up to 738,791 shares of Common Stock. On August 30, 2023, the Company closed the second tranche of this additional funding by issuing a Note with an

initial conversion price equal to the lowest of (i) \$0.20, (ii) the closing sale price of Common Stock on the trading day immediately preceding the date of conversion of the Note, and (iii) the average closing sale price of the Common Stock for the five (5) consecutive trading days immediately preceding the conversion date of the Note, in a principal amount of \$543,478.26, and a Warrant to purchase up to 738,791 shares of Common Stock. In connection with the second additional closing, on August 30, 2023, the Company entered into a side letter with the Selling Securityholder (the "Letter Agreement"), pursuant to which the Company agreed to adjust the conversion price of all Notes issued under the SPA, including all Notes issued in prior closings under the SPA, to the lowest of (i) \$0.20, (ii) the closing sale price of Common Stock on the trading day immediately preceding the date of conversion of the Note, and (iii) the average closing sale price of the Common Stock for the five (5) consecutive trading days immediately preceding the conversion date of the Note.

On September 26, 2023, the Company closed the third tranche of the additional funding by issuing a Note with an initial conversion price equal to the lowest of (i) \$0.20, (ii) the closing sale price of Common Stock on the trading day immediately preceding the date of conversion of the Note, and (iii) the average closing sale price of the Common Stock for the five (5) consecutive trading days immediately preceding the conversion date of the Note, in a principal amount of \$543,478.26, and a Warrant to purchase up to 738,791 shares of Common Stock. On November 27, 2023, the Company closed the fourth tranche of the additional financing by issuing a Note with an initial conversion price equal to the lowest of (i) \$0.37, (ii) the closing sale price of Common Stock on the trading day immediately preceding the date of conversion of the Note, and (iii) the average closing sale price of the Common Stock for the five (5) consecutive trading days immediately preceding the conversion date of the Note, in a principal amount of \$543,478.26, and a Warrant to purchase up to 738,791 shares of Common Stock with an exercise price of \$0.20 per share.

The Selling Securityholder has sold all of the shares registered pursuant to the Form S-1 following the conversion of certain Notes in the aggregate principal amount plus accrued interest of \$4.9 million. This prospectus relates to the offer and resale by the Selling Securityholder of up to an aggregate of 18,183,659 additional shares of Common Stock, consisting of (i) up to 10,462,875 shares of Common Stock issuable upon conversion of the remaining Notes (the "Convertible Shares") and (ii) up to 7,720,784 shares of Common Stock issuable upon exercise of the Warrants (the "Exercisable Shares", and together with the Convertible Shares, the "Shares").

We will not receive any proceeds from the sale of the Shares by the Selling Securityholder. In the event the Selling Securityholder exercises all of the Warrants in cash at an exercise price of \$0.20 per share, we may receive an aggregate of \$1,396,398 of gross proceeds. Any proceeds that we receive from the exercise of such Warrants will be used for working capital and general corporate purposes.

Our registration of the Shares covered by this prospectus does not mean that the Selling Securityholder will offer or sell any of the Shares. See the section titled "Plan of Distribution" for additional information about how the Selling Securityholder may sell or otherwise dispose of the Shares. See the section titled "Selling Securityholder" for additional information regarding the Selling Securityholder.

Our Common Stock and warrants exercisable for one share of Common Stock for \$11.50 per share (which does not include the Warrants) (the "Listed Warrants") are traded on The Nasdaq Capital Market ("Nasdaq") under the symbols "ICU" and "ICUCW," respectively. On November 30, 2023, the last reported sale price on Nasdaq of our Common Stock was \$0.51 per share and the closing price of our Listed Warrants was \$0.0340 per warrant. We are a "smaller reporting company" and an "emerging growth company" as defined under the federal securities laws and, as such, have elected to comply with certain reduced reporting requirements for this prospectus and may elect to do so in future filings.

Investing in our securities involves a high degree of risk. You should review carefully the risks and uncertainties described under the heading "Risk Factors" on page 6 of this prospectus as well as those contained in the applicable prospectus supplement and any related free writing prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus.

Neither the Securities Exchange Commission nor any state securities commission has approved or disapproved of these securities or determined if this prospectus is truthful or complete. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2023.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 (the “Registration Statement”) that we filed with the Securities and Exchange Commission (the “SEC”) using the “shelf” registration process. Under this shelf registration process, the Selling Securityholder may, from time to time, sell the securities offered by it described in this prospectus. We will not receive any proceeds from the sale of the Shares by the Selling Securityholder. In the event the Selling Securityholder exercises all of the Warrants in cash at an exercise price of \$0.20 per share, we may receive an aggregate of \$1,396,398 of gross proceeds. Any proceeds that we receive from the exercise of such Warrants will be used for working capital and general corporate purposes.

We have not, and the Selling Securityholder has not, authorized anyone to provide you with information different than or inconsistent with the information contained in or incorporated by reference in this prospectus, any applicable prospectus supplement or any free writing prospectus that we have authorized for use in connection with this offering. Neither we nor the Selling Securityholder take responsibility for, and can provide no assurance as to the reliability of, any other information that others may give you. We are not, and the Selling Securityholder is not making an offer to sell these securities in any jurisdiction where the offer or sale is not permitted or in which the person making that offer or solicitation is not qualified to do so or to anyone to whom it is unlawful to make an offer or solicitation. You should assume that the information contained in or incorporated by reference in this prospectus, any applicable prospectus supplement or in any free writing prospectus that we have authorized for use in connection with this offering, is accurate only as of the date of those respective documents, regardless of the time of delivery of those respective documents. Our business, financial condition, results of operations and prospects may have changed since those dates. You should read this prospectus, any applicable prospectus supplement, any free writing prospectus that we have authorized for use in connection with this prospectus and the documents incorporated by reference in this prospectus, any applicable prospectus supplement, any free writing prospectus that we have authorized for use in connection with this prospectus, in their entirety before making an investment decision. You should also read and consider the information in the documents to which we have referred you in the sections titled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

The Selling Securityholder is offering to sell, and seeking offers to buy, the securities offered by the Selling Securityholder described in this prospectus only in jurisdictions where offers and sales are permitted. The distribution of this prospectus and this offering of our securities in certain jurisdictions may be restricted by law. Persons outside the United States who come into possession of this prospectus must inform themselves about, and observe any restrictions relating to, this offering of our securities and the distribution of this prospectus outside the United States. This prospectus does not constitute, and may not be used in connection with, an offer to sell, or a solicitation of an offer to buy, any securities offered by this prospectus by any person in any jurisdiction in which it is unlawful for such person to make such an offer or solicitation.

Unless otherwise mentioned or unless the context indicates otherwise, all references in this prospectus the “Company,” “we,” “us” and “our” refer to the business of SeaStar Medical Holding Corporation, a Delaware corporation, and its consolidated subsidiaries following the Business Combination (as defined below). “LMAO” refers to LMF Acquisition Opportunities, Inc. prior to

the Business Combination. LMFAO Sponsor, LLC is LMAO's sponsor and sole holder of founding shares (the "Sponsor").

PROSPECTUS SUMMARY

The following summary highlights certain information about us, this offering and selected information contained elsewhere in or incorporated by reference into this prospectus. This summary is not complete and does not contain all of the information that you should consider before deciding whether to invest in our securities. For a more complete understanding of our company and this offering, you should read and consider carefully the more detailed information included or incorporated by reference in this prospectus, including the factors described under the heading "Risk Factors."

Business Summary

Company Overview

We are a medical technology company focused primarily on developing and commercializing our lead product candidate, the Selective Cytopheretic Device ("SCD"), for pediatric and adult acute kidney injury ("AKI") indications. We submitted an application for a Humanitarian Device Exemption ("HDE") for SCD in June 2022 for the treatment of pediatric patients with AKI on continuous renal replacement therapy ("CRRT"). On September 29, 2023, we received a correspondence from the U.S. Food and Drug Administration ("FDA") indicating that this HDE is approvable for use in children weighing 10 kilograms or more with AKI and sepsis or a septic condition requiring CRRT in the hospital intensive care unit ("ICU"). On October 30, 2023, we announced that we received the approvable letter from the FDA. Following the receipt of this approvable letter, we intend to work diligently and expeditiously to respond to these requests for additional information and address these concerns for approval of our HDE application. We anticipate receiving the HDE approval letter between December 2023 and January 2024. We believe the approval of our HDE will confirm SCD and our technology as an effective tool to treat hyperinflammation related diseases, which will enable us to successfully execute our business and growth strategies.

In addition, we have enrolled the first patient in the pivotal trial of SCD for adult patients with AKI on CRRT based on a previously approved investigative device exemption ("IDE") protocol. The SCD received a Breakthrough Device Designation from the FDA on April 29, 2022, for the proposed use in the treatment of immunomodulatory dysregulation in adult patients who are 18 years and older with AKI. We began enrollment of adult patients in June 2023 and expect to generate interim study results by mid-2024 and topline study results and submission of a Pre-market Approval ("PMA") application by the end of 2024, and we are targeting FDA approval by the end of 2025. There is no guarantee that we will complete the AKI adult trial in a timely manner, or at all, nor will there be any assurance that positive data will be generated from such a trial. Even if we can generate positive results from this trial, the FDA and other regulatory agencies may require us to conduct additional trials to support the study or disagree with the design of the trial and request changes or improvements to such design. To date, we have not obtained regulatory approval to commercialize or sell any of our products candidates.

On September 28, 2023, we received Breakthrough Device Designation for our patented and cell-directed SCD for use with patients in the hospital ICU with acute or chronic systolic heart failure

and worsening renal function due to cardiorenal syndrome or right ventricular dysfunction awaiting implantation of a left ventricular assist device.

On October 18, 2023, we received Breakthrough Device Designation for our patented and cell-directed SCD for use with patients in the hospital ICU with AKI and acute on chronic liver failure. We have been granted three Breakthrough Device Designations from the FDA for the SCD device, each of which is expected to expedite the clinical development and regulatory review of the SCD for use in the designated patient population.

We believe that our novel therapeutic device is readily applicable for use in other indications, which will require additional clinical studies and FDA approval. As we continue our work to expand indications, we believe we would have the ability to take advantage of economies of scale to reduce costs of production. We believe our scalable manufacturing process demonstrates a significant competitive advantage in the hyperinflammatory market.

On October 23, 2022, we completed a business combination with LMAO, pursuant to that certain Agreement and Plan of Merger, dated as of April 21, 2022 (the “Merger Agreement”), by and among LMAO, LMF Merger Sub, Inc., a Delaware corporation and direct wholly owned subsidiary of LMAO (“Merger Sub”), and SeaStar Medical, Inc., a Delaware corporation (“SeaStar Medical, Inc.”). As contemplated by the Merger Agreement, SeaStar Medical, Inc. merged with and into Merger Sub, with SeaStar Medical, Inc. continuing as the surviving entity in the merger as a wholly owned subsidiary of LMAO (the “Business Combination”). In connection with the closing of the Business Combination (the “Closing”), LMAO changed its name to “SeaStar Medical Holding Corporation.”

Corporate Information

Our principal executive offices are located at 3513 Brighton Boulevard, Suite #410, Denver, Colorado 80216, and our phone number is 844-427-8100.

Implications of Being a Smaller Reporting Company

We are a “smaller reporting company” meaning that the market value of our Common Stock held by non-affiliates is less than \$250.0 million measured on the last business day of our second fiscal quarter or our annual revenue is less than \$100.0 million during the most recent completed fiscal year and the market value of our Common Stock held by non-affiliates is less than \$700.0 million measured on the last business day of our second fiscal quarter. Accordingly, we may provide less public disclosure than larger public companies, including the inclusion of only two years of audited financial statements and only two years of management’s discussion and analysis of financial condition and results of operations disclosure. As a result, the information that we provide to our stockholders may be different than you might receive from other public reporting companies in which you hold equity interests.

THE OFFERING

Securities Offered by the Selling Securityholder

Up to 18,183,659 shares of Common Stock consisting of (i) up to 10,462,875 Convertible Shares and (ii) up to 7,720,784 Exercisable Shares.

Use of Proceeds

We will not receive any proceeds from the sale of the Shares by the Selling Securityholder. In the event the Selling Securityholder exercises all of the Warrants in cash at an exercise price of \$0.20 per share, we may receive an aggregate of \$1,396,398 of gross proceeds. Any proceeds that we receive from the exercise of such Warrants will be used for working capital and general corporate purposes.

Risk Factors

Investing in our securities involves a high degree of risk. See the section titled "Risk Factors" on page 6 of this prospectus and under similar headings in other documents incorporated by reference herein.

Nasdaq Capital Market Symbol

Our Common Stock and Listed Warrants are listed for trading on The Nasdaq Capital Market under the symbols "ICU" and "ICUCW," respectively.

RISK FACTORS

An investment in our securities involves a high degree of risk. You should carefully consider the following risk factors and the risk factors discussed under the section titled “Risk Factors” contained in our most recent Annual Report on Form 10-K and in our subsequent Quarterly Reports on Form 10-Q, as updated by any amendments thereto reflected in subsequent filings, which are incorporated by reference into this prospectus in their entirety, together with all of the other information contained in this prospectus or incorporated by reference into this prospectus, any prospectus supplement and any free writing prospectus that we may authorize. The risks and uncertainties described in these documents are not the only ones we face. Other risks and uncertainties, including those that we do not currently consider material, may impair our business. If any of the risks discussed below or incorporated by reference actually occur, our business, financial condition, operating results or cash flows could be materially adversely affected. This could cause the value of our securities to decline, and you may lose all or part of your investment.

Risks Related to the Company’s Financial Condition

The Company has incurred significant losses since its inception and anticipates that it will continue to incur significant losses in the foreseeable future.

The Company is a medical technology company focused primarily on developing and commercializing its lead product candidate, the SCD, for pediatric and adult AKI indications. The Company applied for a HDE for SCD in June 2022 for the treatment of pediatric patients with AKI on CRRT. On September 29, 2023, the Company received a correspondence from the FDA indicating that this HDE is approvable for use in children weighing 10 kilograms or more with AKI and sepsis or a septic condition requiring CRRT in the hospital ICU. On October 30, 2023, the Company announced that it received the approvable letter from the FDA. Following the receipt of this approvable letter, the Company intends to work diligently and expeditiously to respond to these requests for additional information and address these concerns for approval of its HDE application. The Company anticipates receiving the HDE approval letter between December 2023 and January 2024. The Company believes the approval of its HDE will confirm SCD and its technology as an effective tool to treat hyperinflammation related diseases, which will enable it to successfully execute our business and growth strategies.

In addition, on February 9, 2023, the Company received approval from the FDA of its IDE application to conduct a pivotal study evaluating the effectiveness of its SCD in reducing hyperinflammation in adults with AKI requiring CRRT. The Company began enrollment in June 2023 and expects to generate interim study results by mid-2024 and topline study results and submission of a PMA application by the end of 2024, and the Company is targeting FDA approval by the end of 2025. However, there is no guarantee that the Company will complete any planned clinical trial in a timely manner, or at all, nor will there be any assurance that positive data will be generated from such a trial. Even if the Company is able to generate positive results from this trial, the FDA and other regulatory agencies may require the Company to conduct additional trials to support the study or disagree with the design of the trial and request changes or improvements to such design.

To date, the Company has not obtained regulatory approval to commercialize or sell any of its SCD product candidates, and it does not expect to generate any significant revenue in the foreseeable future. We have incurred significant net losses since our inception and had an accumulated deficit of \$99.3 million and, \$76.3 million as of December 31, 2022, and 2021, respectively.

The Company has devoted most of its financial resources to research and development, including clinical trials and non-clinical development activities, and to obtain regulatory approval of its SCD product candidates. Since the completion of the Business Combination, the Company relied primarily on the sales of securities to fund its operations and are limited as the Company needs to meet certain conditions before such funding becomes available. The size of its future net losses will depend, in part, on the rate of future expenditures and its ability to generate revenues. To date, none of its product candidates have generated significant revenue, and if its product candidates are not successfully developed or commercialized, or if revenues are insufficient following marketing approval, it will not achieve profitability and its business may fail. Even if the Company successfully obtains regulatory approval to market its product candidates in the United States, its revenues are also dependent upon the size of the markets outside of the United States, regulatory approval outside of the United States, and its ability to obtain market approval and achieve commercial success.

The Company expects to continue to incur substantial and increased expenses as it expands research and development activities and advances clinical programs through the regulatory approval process. The Company also expects an increase in its expenses associated with preparing for the potential commercialization of its products and creating additional infrastructure to support operations as a public company. As a result of the foregoing, it expects to continue to incur significant and increasing losses and negative cash flows in the foreseeable future.

Risks Related to the Company's Business Operations

Delays in successfully completing the Company's planned clinical trials could jeopardize its ability to obtain regulatory approval.

The Company's business prospects will depend on its ability to complete studies, clinical trials, including its planned pivotal trials of its SCD for adult AKI indication, obtain satisfactory results, obtain required regulatory approvals, and successfully commercialize its SCD product candidates. The completion of the Company's clinical trials, the announcement of results of the trials and its ability to obtain regulatory approvals could be delayed for a variety of reasons, including:

- slow patient enrollment;
- serious adverse events related to its medical device candidates;
- insufficient funding to engage or continue to engage contract research organization to execute the trials;
- unsatisfactory results of any clinical trial;
- the failure of principal third-party investigators to perform clinical trials on the Company's anticipated schedules; and
- different interpretations of the Company's pre-clinical and clinical data, which could initially lead to inconclusive results.

The Company's development costs will increase if it has material delays in any clinical trial or if it needs to perform more or larger clinical trials than planned. If the delays are significant, or if any of its product candidates do not prove to be safe or effective or do not receive regulatory approvals, the Company's financial results and the commercial prospects for its product candidates would be harmed. Furthermore, the Company's inability to complete its clinical trials in a timely manner could jeopardize its ability to obtain regulatory approval.

Risks Related to Being a Public Company

Our Common Stock may be delisted from Nasdaq if we do not maintain compliance with Nasdaq's continued listing requirements. If our Common Stock is delisted, it could negatively impact the Company.

Continued listing of a security on Nasdaq is conditioned upon compliance with various continued listing standards. There can be no assurance that we will be able to comply with the applicable listing standards.

On June 14, 2023, we received a letter from the Listing Qualifications Department of Nasdaq notifying us that the Market Value of Listed Securities ("MVLS") of our Common Stock had been below the minimum \$35,000,000 required for continued listing as set forth in Nasdaq Listing Rule 5550(b)(2) (the "MVLS Requirement").

The letter also states that we would be provided 180 calendar days, or until December 11, 2023, to regain compliance with the MVLS Requirement. If we did not regain compliance within such a compliance period, we would receive a written notification from Nasdaq that our securities are subject to delisting. At that time, we may appeal the delisting determination to a hearings panel.

On June 26, 2023, we received a letter from the Listing Qualifications Department of Nasdaq notifying us that the Company was not in compliance with the \$1.00 per share minimum requirement for continued inclusion on the Nasdaq Capital Market pursuant to Nasdaq Listing Rule 555(a)(2) (the "Bid Price Requirement").

This letter has no immediate effect on the listing of the Company's Common Stock on Nasdaq and the Company has 180 calendar days from the date of the notice to regain compliance with the Bid Price Requirement. As a result, the date by which we must regain compliance with the Bid Price Requirement is December 26, 2023. If at any time prior to December 26, 2023, the bid price of our Common Stock closes at or above \$1.00 per share for a minimum of ten consecutive business days, Nasdaq will provide us with a written confirmation of compliance and the matter will be closed.

Alternatively, if we fail to regain compliance with the Bid Price Requirement prior to the expiration of the initial period, the Company may be eligible for an additional 180 calendar day compliance period, provided that (i) it meets the continued listing requirement for market value of publicly held shares and all other applicable requirements for initial listing on Nasdaq (except for the Bid Price Requirement), and (ii) it provides written notice to Nasdaq of its intention to cure this deficiency during the second compliance period by effecting a reverse stock split, if necessary. In the event we do not regain compliance with the Bid Price Requirement prior to the expiration of the initial period, and if it appears to Nasdaq that the Company will not be able to cure the deficiency, or if the Company is not otherwise eligible, Nasdaq will provide us with written

notification that our securities are subject to delisting from Nasdaq. At that time, we may appeal the delisting determination to a hearings panel.

If the Company's Common Stock ultimately were to be delisted for any reason, it could negatively impact the Company by (i) reducing the liquidity and market price of the Company's Common Stock; (ii) reducing the number of investors willing to hold or acquire the Company's Common Stock, which could negatively impact the Company's ability to raise equity financing; (iii) limiting the Company's ability to use a registration statement to offer and sell freely tradable securities, thereby preventing the Company from accessing the public capital markets; and (iv) impairing the Company's ability to provide equity incentives to its employees.

Risks Related to Ownership of Our Common Stock

The trading price of our Common Stock has been volatile and is likely to be volatile in the future.

Our Common Stock could be subject to wide fluctuation in response to many risk factors listed in this section, and others beyond our control, including:

- market acceptance and commercialization of our products;
- our being able to timely demonstrate achievement of milestones, including those related to revenue generation, cost control, cost effective source supply and regulatory approvals;
- regulatory developments or enforcements in the United States and non-U.S. countries with respect to our products or our competitors' products;
- failure to achieve pricing acceptable to the market;
- actual or anticipated fluctuations in our financial condition and operating results, or our continuing to sustain operating losses;
- competition from existing products or new products that may emerge;
- announcements by us or our competitors of significant acquisitions, strategic partnerships, joint ventures, collaborations or capital commitments;
- issuance of new or updated research or reports by securities analysts;
- announcement or expectation of additional financing efforts, particularly if our cash available for operations significantly decreases;
- fluctuations in the valuation of companies perceived by investors to be comparable to us;
- share price and volume fluctuations attributable to inconsistent trading volume levels of our shares;
- additions or departures of key management personnel;
- disputes or other developments related to proprietary rights, including patents, litigation matters and our ability to obtain patent protection for our technologies;
- entry by us into any material litigation or other proceedings;
- sales of our Common Stock by us, our insiders, or our other stockholders;
- market conditions for stocks in general; and
- general economic and market conditions unrelated to our performance.

Furthermore, the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These

fluctuations often have been unrelated or disproportionate to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political, and market conditions such as recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of shares of our Common Stock. In addition, such fluctuations could subject us to securities class action litigation, which could result in substantial costs and divert our management's attention from other business concerns, which could seriously harm our business. If the market price of shares of our Common Stock after this offering does not exceed the price at which you obtain shares of our Common Stock, you may not realize any return on your investment in us and may lose some or all your investment.

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

The trading market for our Common Stock is impacted by the research and reports that securities or industry analysts publish about us or our business. We do not have any control over these analysts. We cannot assure that analysts will continue to cover us or provide favorable coverage. If one or more of the analysts who cover us downgraded our stock or change their opinion of our stock, our share price would likely decline. If one or more of these analysts cease coverage of us 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.

Future sales, or the possibility of future sales, of a substantial number of shares of our Common Stock could adversely affect the price of the shares and dilute stockholders.

Future sales of a substantial number of shares of our Common Stock, or the perception that such sales will occur, could cause a decline in the market price of our Common Stock. This is particularly true if we sell our stock at a discount. If our stockholders sell substantial amounts of Common Stock in the public market, or the market perceives that such sales may occur, the market price of our Common Stock and our ability to raise capital through an issue of equity securities in the future could be adversely affected.

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

We have not paid cash dividends in the past and do not expect to pay dividends in the future. Any return on investment may be limited to the value of our Common Stock.

We have never paid cash dividends on our Common Stock and do not anticipate doing so in the foreseeable future. The payment of dividends on our Common Stock will depend on earnings, financial condition and other business and economic factors affecting us at such time as our board of directors (the "Board") may consider relevant. Further, the agreements governing our indebtedness limit our ability to make dividends on our Common Stock. If we do not pay dividends, our Common Stock may be less valuable because a return on your investment will only occur if our stock price appreciates.

We are an “emerging growth company” as that term is used in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”), and we intend to continue to take advantage of reduced disclosure and governance requirements applicable to emerging growth companies, which could result in our Common Stock being less attractive to investors and adversely affect the market price of our Common Stock or make it more difficult to raise capital as and when we need it.

We are an “emerging growth company” as that term is used in the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”), and we intend to continue 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 our periodic reports and proxy statements, exemptions from the requirements of holding a nonbinding advisory vote on executive compensation and stockholder approval of any golden parachute payments not previously approved, and exemptions from any rules that the Public Company Accounting Oversight Board may adopt requiring mandatory audit firm rotation or a supplement to the auditor’s report on the financial statements. We currently take advantage of some, but not all, of the reduced regulatory and reporting requirements that are available to us under the JOBS Act and intend to continue to do so if we qualify as an “emerging growth company.” For example, so long as we qualify as an “emerging growth company,” we may elect not to provide you with certain information, including certain financial information and certain information regarding compensation of our executive officers, that we would have otherwise been required to provide in filings we make with the SEC, which may make it more difficult for investors and securities analysts to evaluate us.

We cannot predict if investors will find our Common Stock less attractive because we will rely on these exemptions. If some investors find our Common Stock less attractive as a result, there may be a less active trading market for our Common Stock and our stock price may be more volatile. We may take advantage of these reporting exemptions until we are no longer an emerging growth company, which in certain circumstances could be for up to five years.

Because of the exemptions from various reporting requirements provided to us as an “emerging growth company,” we may be less attractive to investors, and it may be difficult for us to raise additional capital as and when we need it. Investors may be unable to compare our business with other companies in our industry if they believe that our financial accounting is not as transparent as other companies in our industry. If we are unable to raise additional capital as and when we need it, our business, results of operations, financial condition and cash flows, and prospects may be materially and adversely affected.

Risks Related to this Offering

The sale or availability for sale of shares issuable upon conversion of the Notes or exercise of the Warrants may depress the price of our Common Stock and encourage short sales by third parties, which could further depress the price of our Common Stock.

To the extent that the Selling Securityholder sells shares of our Common Stock issued upon conversion of the Notes or exercise of the Warrants, the market price of such shares may decrease

due to the additional selling pressure in the market. In addition, the dilution from issuances of such shares may cause stockholders to sell their shares of our Common Stock, which could further contribute to any decline in the price of our Common Stock. Any downward pressure on the price of our Common Stock caused by the sale or potential sale of such shares could encourage short sales by third parties. Such sales could place downward pressure on the price of our Common Stock by increasing the number of shares of our Common Stock being sold, which could further contribute to any decline in the market price of our Common Stock.

Investors who buy shares at different times will likely pay different prices.

The Selling Securityholder has the discretion to convert the Notes into shares of Common Stock. If and when the Selling Securityholder elects to convert the Notes, the Selling Securityholder may resell all, some or none of such shares at any time or from time to time in its discretion and at different prices. As a result, investors who purchase shares from the Selling Securityholder in this offering at different times will likely pay different prices for those shares, and so may experience different levels of dilution and in some cases substantial dilution and different outcomes in their investment results.

Future sales and issuances of our Common Stock or other securities might result in significant dilution and could cause the price of our Common Stock to decline.

To raise capital, we may sell Common Stock, convertible securities or other equity securities in one or more transactions, at prices and in a manner we determine from time to time. We may sell shares or other securities in any other offering at a price per share that is less than the price per share paid by investors in this offering, and investors purchasing shares or other securities in the future could have rights superior to existing stockholders. The price per share at which we sell additional shares of our Common Stock, or securities convertible or exchangeable into Common Stock, in future transactions may be higher or lower than the price per share paid by investors in this offering.

We cannot predict what effect, if any, sales of shares of our Common Stock in the public market or the availability of shares for sale will have on the market price of our Common Stock. However, future sales of substantial amounts of our Common Stock in the public market, including shares issued upon exercise of outstanding options, or the perception that such sales may occur, could adversely affect the market price of our Common Stock.

Management will have broad discretion as to the use of the proceeds from the offering, and uses may not improve our financial condition or market value.

We will not receive any proceeds from the sale of the Shares by the Selling Securityholder. In the event the Selling Securityholder exercises all of the Warrants in cash at an exercise price of \$0.20 per share, we may receive an aggregate of \$1,396,398 of gross proceeds. Any proceeds that we receive from the exercise of such Warrants will be used for working capital and general corporate purposes.

Because we have not designated the amount of proceeds from the offering to be used for any particular purpose, our management will have broad discretion as to the application of such

proceeds and could use them for purposes other than those contemplated hereby. Our management may use the proceeds for corporate purposes that may not improve our financial condition or market value.

CAUTIONARY NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents incorporated by reference herein and therein, contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the "Securities Act") and Section 21E of the Exchange Act of 1934, as amended (the "Exchange Act"). These statements are based on our management's current beliefs, expectations and assumptions about future events, conditions and results and on information currently available to us. Discussions containing these forward-looking statements may be found, among other places, in the sections titled "Business," "Risk Factors" and "Management's Discussion and Analysis of Financial Condition and Results of Operations" incorporated by reference from our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q filed with the SEC, as well as any amendments thereto reflected in subsequent filings with the SEC.

Any statements in this prospectus or incorporated by reference herein or therein about our expectations, beliefs, plans, objectives, assumptions or future events or performance are not historical facts and are forward-looking statements. Within the meaning of Section 27A of the Securities Act and Section 21E of the Exchange Act, these forward-looking statements may include, but are not limited to, statements regarding:

- the Company's future capital requirements and sources and uses of cash;
- the Company's ability to obtain funding or raise capital for its operations and future growth;
- any delays or challenges in obtaining FDA approval of the Company's SCD product candidates;
- economic downturns and the possibility of rapid change in the highly competitive industry in which the Company operates;
- the ability to develop and commercialize its products or services following regulatory approval of the Company's product candidates;
- the failure of third-party suppliers and manufacturers to fully and timely meet their obligations;
- product liability or regulatory lawsuits or proceedings relating to the Company's products and services;
- inability to secure or protect its intellectual property;
- dispute or deterioration of relationship with the Company's major partners and collaborators;
- the ability to maintain the listing of the Company's Common Stock on Nasdaq;
- the ability to recognize the anticipated benefits of the Business Combination, which may be affected by, among other things, competition, and the ability of the Company to grow and manage growth profitably; and
- other risks and uncertainties indicated in this prospectus, including those under "Risk Factors" herein, and other filings that have been made or will be made with the SEC.

In some cases, you can identify forward-looking statements by terminology such as "anticipate," "believe," "continue," "could," "estimate," "expects," "intend," "may," "might," "plan," "potential," "predict," "project," "should," "will," "would" or the negative or plural of those terms, and similar expressions intended to identify statements about the future, although not all forward-

looking statements contain these words. These statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to be materially different from the information expressed or implied by these forward-looking statements. 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 prospectus, 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 investors are cautioned not to unduly rely upon these statements.

You should refer to the risks and uncertainties described in the sections titled “Risk Factors” in this prospectus, and under similar headings in the other documents that are incorporated by reference into this prospectus, for a discussion of important factors that may cause our actual results to differ materially from those expressed or implied by our forward-looking statements. Given these risks, uncertainties and other factors, many of which are beyond our control, we cannot assure you that the forward-looking statements in this prospectus will prove to be accurate, and you should not place undue reliance on these forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the future results, levels of activity, performance or events and circumstances reflected in the forward-looking statements will be achieved or occur. Furthermore, if our forward-looking statements prove to be inaccurate, the inaccuracy may be material. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by us or any other person that we will achieve our objectives and plans in any specified time frame, or at all.

Except as required by law, we assume no obligation to update these forward-looking statements publicly, or to revise any forward-looking statements to reflect events or developments occurring after the date of this prospectus, even if new information becomes available in the future.

USE OF PROCEEDS

We will not receive any proceeds from the sale of the Shares by the Selling Securityholder. In the event the Selling Securityholder exercises all of the Warrants in cash at an exercise price of \$0.20 per share, we may receive an aggregate of \$1,396,398 of gross proceeds. Any proceeds that we receive from the exercise of such Warrants will be used for working capital and general corporate purposes.

DESCRIPTION OF SECURITIES

The following summary of the material terms of our securities is not intended to be a complete summary of the rights and preferences of such securities. The descriptions below are qualified by reference to the actual text of the Third Amended and Restated Certificate of Incorporation of SeaStar Medical Holding Corporation, as amended (the "Charter"). We urge you to read the Charter in its entirety for a complete description of the rights and preferences of our securities.

Authorized and Outstanding Stock

The Charter authorizes the issuance of 510,000,000 shares, consisting of (a) 500,000,000 shares of Common Stock and (b) 10,000,000 shares of preferred stock (the "Preferred Stock").

The outstanding shares of Common Stock issued in the Business Combination are duly authorized, validly issued, fully paid and non-assessable. All outstanding shares of LMAO Class B Common Stock following the Business Combination were converted into shares of LMAO Class A Common Stock on a one-to-one basis. Immediately following the conversion of such Class B Common Stock into shares of Class A Common Stock, each share of Class A Common Stock issued and outstanding was reclassified, redesignated and changed into one validly issued, fully paid and non-assessable share of Common Stock.

As of November 27, 2023, there were 42,122,309 shares of Common Stock issued and outstanding and no shares of Preferred Stock issued and outstanding.

Common Stock

The Charter provides the following with respect to the rights, powers, preferences and privileges of the Common Stock:

Voting Power

Except as otherwise required by law or as otherwise provided in any certificate of designation for any series of preferred stock, the holders of Common Stock possess all voting power for the election of the Company's directors and all other matters requiring stockholder action. Holders of Common Stock are entitled to one vote per share on matters to be voted on by stockholders. The Charter does not provide for cumulative voting rights.

Dividends

Subject to the rights, if any, of the holders of any outstanding shares of Preferred Stock, under the Charter, holders of Common Stock will be entitled to receive such dividends, if any, as may be declared from time to time by the Board in its discretion out of funds legally available therefor.

Liquidation, Dissolution and Winding Up

In the event of the Company's voluntary or involuntary liquidation, dissolution, distribution of assets or winding-up, the holders of the Common Stock will be entitled to receive an equal amount per share of all of the Company's assets of whatever kind available for distribution to stockholders,

after the rights of the holders of the Preferred Stock have been satisfied and after payment or provision for payment of the Company's debts.

Preemptive or Other Rights

There are no preemptive rights or sinking fund provisions applicable to the shares of the Company's Common Stock.

Preferred Stock

The Charter provides that shares of Preferred Stock may be issued from time to time in one or more series. Our Board is authorized to fix the voting rights, if any, designations, powers, preferences, the relative, participating, optional, or other special rights and any qualifications, limitations, and restrictions thereof, applicable to the shares of each series. Our Board will be able to, without stockholder approval, issue Preferred Stock with voting and other rights that could adversely affect the voting power and other rights of the holders of the Common Stock and could have anti-takeover effects. The ability of our Board to issue Preferred Stock without stockholder approval could have the effect of delaying, deferring, or preventing a change of control of us or the removal of existing management. We have no Preferred Stock outstanding at the date hereof. Although we do not currently intend to issue any shares of Preferred Stock, we cannot assure you that we will not do so in the future.

While we have no current plans to issue Preferred Stock, circumstances in which we might issue Preferred Stock in the future could include, among others, offerings of Preferred Stock undertaken for capital raising purposes (whether before or in connection with our initial business combination or thereafter), issuances in connection with acquisitions we might make in the future, or issuances in connection with potential change of control or strategic transactions involving us. Any determination by us to issue shares of Preferred Stock in the future will be dependent on the facts and circumstances at the time.

Warrants

Listed Warrants

Each Listed Warrant entitles the holder thereof to purchase one share of Common Stock at a price of \$11.50 per share, subject to adjustment as discussed below, at any time after November 27, 2022. The Listed Warrants will expire on October 28, 2027, or earlier upon redemption or liquidation.

We will not be obligated to deliver any shares of Common Stock pursuant to the exercise of a warrant and will have no obligation to settle such warrant exercise unless a registration statement under the Securities Act with respect to the shares of Common Stock underlying the Listed Warrants is then effective and a prospectus relating thereto is current, subject to our satisfying our obligations described below with respect to registration. No warrant will be exercisable and we will not be obligated to issue shares of Common Stock upon exercise of a warrant unless Common Stock issuable upon such warrant exercise has been registered, qualified or deemed to be exempt under the securities laws of the state of residence of the registered holder of the Listed Warrants. In the event that the conditions in the two immediately preceding sentences are not satisfied with

respect to a warrant, the holder of such warrant will not be entitled to exercise such warrant and such warrant may have no value and expire worthless. In no event will we be required to net cash settle any Listed Warrant. In the event that a registration statement is not effective for the exercised warrants, the purchaser of a unit containing such warrant will have paid the full purchase price for the unit solely for the share of Common Stock underlying such unit.

The registration statement of which this prospectus is part provides for the registration, under the Securities Act, of the issuance of the shares of Common Stock issuable upon exercise of the Listed Warrants. We will use our reasonable best efforts to maintain a current prospectus relating to those shares of Common Stock until the Listed Warrants expire or are redeemed, as specified in the warrant agreement. Notwithstanding the above, if our Common Stock is at the time of any exercise of a warrant not listed on a national securities exchange such that it satisfies the definition of a "covered security" under Section 18(b)(1) of the Securities Act, we may, at our option, require holders of Listed Warrants who exercise their Listed Warrants to do so on a "cashless basis" in accordance with Section 3(a)(9) of the Securities Act and, in the event we so elect, we will not be required to file or maintain in effect a registration statement, but we will be required to use our reasonable best efforts to register or qualify the shares under applicable blue sky laws to the extent an exemption is not available.

Once the Listed Warrants become exercisable, we may call the Listed Warrants for redemption (other than the Private Placement Warrants, as described below):

- in whole and not in part;
- at a price of \$0.01 per warrant;
- upon not less than 30 days' prior written notice of redemption (the "30-day redemption period") to each warrant holder; and
- if, and only if, the reported last sale price of the Common Stock equals or exceeds \$18.00 per share (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations and the like) for any 20 trading days within a 30-trading day period ending 3 business days before we send the notice of redemption to the warrant holders.

If and when the Listed Warrants become redeemable by us, we may exercise our redemption right even if we are unable to register or qualify the underlying securities for sale under all applicable state securities laws.

We have established the last of the redemption criterion discussed above to prevent a redemption call unless there is at the time of the call a significant premium to the warrant exercise price. If the foregoing conditions are satisfied and we issue a notice of redemption of the Listed Warrants, each warrant holder will be entitled to exercise its warrant prior to the scheduled redemption date. However, the price of the Common Stock may fall below the \$18.00 redemption trigger price (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations, and the like) as well as the \$11.50 warrant exercise price after the redemption notice is issued.

If we call the Listed Warrants for redemption as described above, our management will have the option to require any holder that wishes to exercise its warrant to do so on a "cashless basis." In determining whether to require all holders to exercise their Listed Warrants on a "cashless basis,"

our management will consider, among other factors, our cash position, the number of Listed Warrants that are outstanding and the dilutive effect on our stockholders of issuing the maximum number of shares of Common Stock issuable upon the exercise of our Listed Warrants. If our management takes advantage of this option, all holders of Listed Warrants would pay the exercise price by surrendering their Listed Warrants for that number of shares of Common Stock equal to the quotient obtained by dividing: (x) the product of the number of shares of Common Stock underlying the Listed Warrants, multiplied by the difference between the exercise price of the Listed Warrants and the “fair market value” (defined below); by (y) the fair market value. The “fair market value” shall mean the average reported last sale price of the Common Stock for the 10 trading days ending on the third trading day prior to the date on which the notice of redemption is sent to the holders of Listed Warrants. If our management takes advantage of this option, the notice of redemption will contain the information necessary to calculate the number of shares of Common Stock to be received upon exercise of the Listed Warrants, including the “fair market value” in such case. Requiring a cashless exercise in this manner will reduce the number of shares to be issued and thereby lessen the dilutive effect of a warrant redemption. We believe this feature is an attractive option to us if we do not need the cash from the exercise of the Listed Warrants after our initial business combination. If we call our Listed Warrants for redemption and our management does not take advantage of this option, our Sponsor and its permitted transferees would still be entitled to exercise their Private Placement Warrants (as described below) for cash or on a cashless basis using the same formula described above that other warrant holders would have been required to use had all warrant holders been required to exercise their Listed Warrants on a cashless basis, as described in more detail below.

A holder of a warrant may notify us in writing in the event it elects to be subject to a requirement that such holder will not have the right to exercise such warrant, to the extent that after giving effect to such exercise, such person (together with such person’s affiliates), to the warrant agent’s actual knowledge, would beneficially own in excess of 4.9% or 9.8% (or such other amount as a holder may specify) of the shares of Common Stock outstanding immediately after giving effect to such exercise.

If the number of outstanding shares of Common Stock is increased by a stock dividend payable in shares of Common Stock, or by a split-up of shares of Common Stock or other similar event, then, on the effective date of such stock dividend, split-up or similar event, the number of shares of Common Stock issuable on exercise of each warrant will be increased in proportion to such increase in the outstanding shares of Common Stock. A rights offering to holders of Common Stock entitling holders to purchase shares of Common Stock at a price less than the fair market value will be deemed a stock dividend of a number of shares of Common Stock equal to the product of: (i) the number of shares of Common Stock actually sold in such rights offering (or issuable under any other equity securities sold in such rights offering that are convertible into or exercisable for Common Stock); and (ii) one (1) minus the quotient of: (x) the price per share of Common Stock paid in such rights offering, divided by (y) the fair market value. For these purposes: (i) if the rights offering is for securities convertible into or exercisable for Common Stock, in determining the price payable for Common Stock, there will be taken into account any consideration received for such rights, as well as any additional amount payable upon exercise or conversion; and (ii) fair market value means the volume weighted average price of Common Stock as reported during the ten (10) trading day period ending on the trading day prior to the first date

on which the shares of Common Stock trade on the applicable exchange or in the applicable market, regular way, without the right to receive such rights.

In addition, if we, at any time while the Listed Warrants are outstanding and unexpired, pay a dividend or make a distribution in cash, securities or other assets to the holders of Common Stock on account of such shares of Common Stock (or other shares of our capital stock into which the Listed Warrants are convertible), other than: (a) as described above; (b) certain ordinary cash dividends; or (c) to satisfy the redemption rights of the holders of Common Stock in connection with the Business Combination, then the warrant exercise price will be decreased, effective immediately after the effective date of such event, by the amount of cash and/or the fair market value of any securities or other assets paid on each share of Common Stock in respect of such event.

If the number of outstanding shares of our Common Stock is decreased by a consolidation, combination, reverse stock split or reclassification of shares of Common Stock or other similar event, then, on the effective date of such consolidation, combination, reverse stock split, reclassification or similar event, the number of shares of Common Stock issuable on exercise of each warrant will be decreased in proportion to such decrease in outstanding shares of Common Stock.

Whenever the number of shares of Common Stock purchasable upon the exercise of the Listed Warrants is adjusted, as described above, the warrant exercise price will be adjusted by multiplying the warrant exercise price immediately prior to such adjustment by a fraction (x) the numerator of which will be the number of shares of Common Stock purchasable upon the exercise of the Listed Warrants immediately prior to such adjustment, and (y) the denominator of which will be the number of shares of Common Stock so purchasable immediately thereafter.

In case of any reclassification or reorganization of the outstanding shares of Common Stock (other than those described above or that solely affects the par value of such shares of Common Stock), or in the case of any merger or consolidation of us with or into another corporation (other than a consolidation or merger in which we are the continuing corporation and that does not result in any reclassification or reorganization of our outstanding shares of Common Stock), or in the case of any sale or conveyance to another corporation or entity of the assets or other property of us as an entirety or substantially as an entirety in connection with which we are dissolved, the holders of the Listed Warrants will thereafter have the right to purchase and receive, upon the basis and upon the terms and conditions specified in the Listed Warrants and in lieu of the shares of our Common Stock immediately theretofore purchasable and receivable upon the exercise of the rights represented thereby, the kind and amount of shares of stock or other securities or property (including cash) receivable upon such reclassification, reorganization, merger or consolidation, or upon a dissolution following any such sale or transfer, that the holder of the Listed Warrants would have received if such holder had exercised their Listed Warrants immediately prior to such event. If less than 70% of the consideration receivable by the holders of Common Stock in such a transaction is payable in the form of Common Stock in the successor entity that is listed for trading on a national securities exchange or is quoted in an established over-the-counter market, or is to be so listed for trading or quoted immediately following such event, and if the registered holder of the warrant properly exercises the warrant within thirty days following public disclosure of such transaction, the warrant exercise price will be reduced as specified in the warrant agreement based

on the Black-Scholes value (as defined in the warrant agreement) of the warrant. The purpose of such exercise price reduction is to provide additional value to holders of the Listed Warrants when an extraordinary transaction occurs during the exercise period of the Listed Warrants pursuant to which the holders of the Listed Warrants otherwise do not receive the full potential value of the Listed Warrants.

The Listed Warrants were issued in registered form under a warrant agreement between Continental, as warrant agent, and us. The description of the Listed Warrants set forth herein is a summary and does not purport to be complete. The warrant agreement provides that the terms of the Listed Warrants may be amended without the consent of any holder to cure any ambiguity or correct any defective provision, but requires the approval by the holders of at least 65% of the then outstanding Listed Warrants to make any change that adversely affects the interests of the registered holders of Listed Warrants.

The Listed Warrants may be exercised upon surrender of the warrant certificate on or prior to the expiration date at the offices of the warrant agent, with the exercise form on the reverse side of the warrant certificate completed and executed as indicated, accompanied by full payment of the exercise price (or on a cashless basis, if applicable), by certified or official bank check payable to us, for the number of Listed Warrants being exercised. The warrant holders do not have the rights or privileges of holders of Common Stock and any voting rights until they exercise their Listed Warrants and receive shares of Common Stock. After the issuance of shares of Common Stock upon exercise of the Listed Warrants, each holder will be entitled to one (1) vote for each share held of record on all matters to be voted on by stockholders.

In addition, if: (x) we issue additional shares of Common Stock or equity-linked securities for capital raising purposes in connection with the closing of the Business Combination at a newly issued price of less than \$9.20 per share of Common Stock (with such issue price or effective issue price to be determined in good faith by our Board and, in the case of any such issuance to our Sponsor or its affiliates, without taking into account any founder shares held by our Sponsor or its affiliates, prior to such issuance); (y) the aggregate gross proceeds from such issuances represent more than 60% of the total equity proceeds, and interest thereon, available for the funding of the Business Combination on the date of the consummation of the Business Combination (net of redemptions); and (z) the Market Value (as defined in the warrant agreement) is below \$9.20 per share, the exercise price of the Listed Warrants will be adjusted (to the nearest cent) to be equal to 115% of the higher of the Market Value and the newly issued price, and the \$18.00 per share redemption trigger price (as adjusted for stock splits, stock dividends, reorganizations, recapitalizations, and the like) will be adjusted (to the nearest cent) to be equal to 180% of the higher of the Market Value and the newly issued price.

We have agreed that, subject to applicable law, any action, proceeding or claim against us arising out of or relating in any way to the warrant agreement will be brought and enforced in the courts of the State of New York or the United States District Court for the Southern District of New York, and we irrevocably submit to such jurisdiction, which jurisdiction will be the exclusive forum for any such action, proceeding or claim. This provision applies to claims under the Securities Act but does not apply to claims under the Exchange Act or any claim for which the federal district courts of the United States of America are the sole and exclusive forum.

Private Placement Warrants

The Private Placement Warrants (including the Common Stock issuable upon exercise of the Private Placement Warrants) will not be redeemable by us so long as they are held by our Sponsor or its permitted transferees. Our Sponsor, or its permitted transferees, has the option to exercise the Private Placement Warrants on a cashless basis. Except as described below, the Private Placement Warrants have terms and provisions that are identical to those of the warrants sold as part of the units in our initial public offering (“IPO”), including as to exercise price, exercisability and exercise period. If the Private Placement Warrants are held by holders other than the Sponsor or its permitted transferees, the Private Placement Warrants will be redeemable by us and exercisable by the holders on the same basis as the warrants included in the units sold in our IPO.

If holders of the Private Placement Warrants elect to exercise them on a cashless basis, they would pay the exercise price by surrendering their warrants for that number of shares of Common Stock equal to the quotient obtained by dividing (x) the product of the number of shares of Common Stock underlying the warrants, multiplied by the difference between the exercise price of the warrants and the “fair market value” (defined below) by (y) the fair market value. The reason that LMAO agreed that these warrants would be exercisable on a cashless basis so long as they are held by the Sponsor or its permitted transferees is because it was not known at that time whether they would be affiliated with us following the Business Combination. If they are affiliated with us, their ability to sell our securities in the open market will be significantly limited. We may have policies in place in the future that prohibit insiders from selling our securities except during specific periods of time. Even during such periods of time when insiders will be permitted to sell our securities, an insider cannot trade in our securities if he or she is in possession of material non-public information. Accordingly, unlike public stockholders who could sell the shares of Common Stock issuable upon exercise of the warrants freely in the open market, the insiders could be significantly restricted from doing so. As a result, LMAO believed that allowing the holders to exercise such warrants on a cashless basis was appropriate.

In order to finance transaction costs in connection with the Business Combination, our Sponsor or an affiliate of our Sponsor or certain of our officers and directors had the option, but were not obligated to, loan us funds as may be required. On February 1, 2022, LMAO issued a promissory note to the Sponsor pursuant to which LMAO may borrow up to an aggregate principal amount of \$500,000 and to which such convertible promissory note was amended and restated on July 28, 2022, to increase the aggregate principal amount to \$1.75 million and subsequently amended by the Sponsor Note, a more detailed discussion of which is contained elsewhere in this prospectus. As of September 30, 2023, we had drawn down \$910,000 under the note to pay for offering expenses.

In addition, holders of our Private Placement Warrants are entitled to certain registration rights.

Listing

Our Common Stock and Listed Warrants are traded on the Nasdaq Capital Market under the symbols “ICU” and “ICUCW,” respectively.

MATERIAL U.S. FEDERAL INCOME TAX CONSEQUENCES

The following discussion is a summary of the U.S. federal income tax considerations generally applicable to the ownership and disposition of our Common Stock and Listed Warrants, which we refer to collectively as our securities. This summary is based upon U.S. federal income tax law as of the date of this prospectus, which is subject to change or differing interpretations, possibly with retroactive effect. This summary does not discuss all aspects of U.S. federal income taxation that may be important to particular investors in light of their individual circumstances, including investors subject to special tax rules (e.g., financial institutions, insurance companies, broker-dealers, tax-exempt organizations (including private foundations), taxpayers that have elected mark-to-market accounting, S corporations, regulated investment companies, real estate investment trusts, passive foreign investment companies, controlled foreign corporations, investors that will hold Common Stock or Listed Warrants as part of a straddle, hedge, conversion, or other integrated transaction for U.S. federal income tax purposes, or investors that have a functional currency other than the U.S. dollar), all of whom may be subject to tax rules that differ materially from those summarized below. In addition, this summary does not discuss other U.S. federal tax consequences (e.g., estate or gift tax), any state, local, or non-U.S. tax considerations or the Medicare tax or alternative minimum tax. In addition, this summary is limited to investors that will hold our securities as “capital assets” (generally, property held for investment) under the Internal Revenue Code of 1986, as amended, (the “Code”). No ruling from the Internal Revenue Service, (the “IRS”) has been or will be sought regarding any matter discussed herein. No assurance can be given that the IRS would not assert, or that a court would not sustain a position contrary to any of the tax aspects set forth below.

For purposes of this summary, a “U.S. Holder” is a beneficial holder of securities who or that, for U.S. federal income tax purposes is:

- an individual who is a United States citizen or resident of the United States;
- a corporation or other entity treated as a corporation for United States federal income tax purposes created in, or organized under the law of, the United States or any state or political subdivision thereof;
- an estate the income of which is includible in gross income for United States federal income tax purposes regardless of its source; or
- a trust (A) the administration of which is subject to the primary supervision of a United States court and which has one or more United States persons (within the meaning of the Code) who have the authority to control all substantial decisions of the trust or (B) that has in effect a valid election under applicable Treasury regulations to be treated as a United States person.

A “non-U.S. Holder” is a beneficial holder of securities that is neither a U.S. Holder nor a partnership for U.S. federal income tax purposes.

If a partnership (including an entity or arrangement treated as a partnership for U.S. federal income tax purposes) holds our securities, the tax treatment of a partner, member or other beneficial owner in such partnership will generally depend upon the status of the partner, member or other beneficial owner, the activities of the partnership and certain determinations made at the partner, member or

other beneficial owner level. If you are a partner, member or other beneficial owner of a partnership holding our securities, you are urged to consult your tax advisor regarding the tax consequences of the ownership and disposition of our securities.

THIS DISCUSSION MATERIAL OF U.S. FEDERAL INCOME TAX CONSIDERATIONS IS FOR GENERAL INFORMATION PURPOSES ONLY AND IS NOT TAX ADVICE. PROSPECTIVE HOLDERS SHOULD CONSULT THEIR TAX ADVISORS CONCERNING THE U.S. FEDERAL INCOME TAX CONSEQUENCES TO THEM OF OWNING AND DISPOSING OF OUR SECURITIES, AS WELL AS THE APPLICATION OF ANY, STATE, LOCAL AND NON-U.S. INCOME, ESTATE AND OTHER TAX CONSIDERATIONS.

U.S. Holders

Taxation of Distributions

We have not paid cash dividends on our capital stock, and we do not anticipate paying any dividends on our Common Stock in the foreseeable future. However, if we do pay distributions to U.S. Holders of shares of our Common Stock, such distributions will constitute dividends for U.S. federal income tax purposes to the extent paid from our current or accumulated earnings and profits, as determined under U.S. federal income tax principles. Distributions in excess of current and accumulated earnings and profits will constitute a return of capital that will be applied against and reduce (but not below zero) the U.S. Holder's adjusted tax basis in our Common Stock. Any remaining excess will be treated as gain realized on the sale or other disposition of the Common Stock and will be treated as described under "U.S. Holders—Gain or Loss on Sale, Taxable Exchange or Other Taxable Disposition of Common Stock" below.

Dividends we pay to a U.S. Holder that is a taxable corporation generally will qualify for the dividends received deduction if the requisite holding period is satisfied. With certain exceptions (including dividends treated as investment income for purposes of investment interest deduction limitations), and provided certain holding period requirements are met, dividends we pay to a non-corporate U.S. Holder will generally constitute "qualified dividends" that will be subject to tax at the maximum tax rate accorded to long-term capital gains.

Gain or Loss on Sale, Taxable Exchange or Other Taxable Disposition of Common Stock

A U.S. Holder will recognize gain or loss on the sale, taxable exchange or other taxable disposition of our Common Stock. Any such gain or loss will be capital gain or loss, and will be long-term capital gain or loss if the U.S. Holder's holding period for the Common Stock so disposed of exceeds one year. The amount of gain or loss recognized will generally be equal to the difference between (1) the sum of the amount of cash and the fair market value of any property received in such disposition and (2) the U.S. Holder's adjusted tax basis in its Common Stock so disposed of. A U.S. Holder's adjusted tax basis in its Common Stock will generally equal the U.S. Holder's acquisition cost less any prior distributions treated as a return of capital. The deductibility of capital losses is subject to limitations.

Redemption of Common Stock

In the event that a U.S. Holder's Common Stock is redeemed by us, including pursuant to an open market transaction, the treatment of the transaction for U.S. federal income tax purposes will depend on whether the redemption qualifies as sale of the Common Stock under Section 302 of the Code. If the redemption qualifies as a sale of Common Stock under the tests described below, the tax consequences to the U.S. Holder will be the same as described under "U.S. Holders—Gain or Loss on Sale, Taxable Exchange or Other Taxable Disposition of Common Stock" above. If the redemption does not qualify as a sale of Common Stock, the U.S. Holder will be treated as receiving a corporate distribution, the tax consequences of which are described above under "U.S. Holders—Taxation of Distributions." Whether the redemption qualifies for sale treatment will depend primarily on the total number of shares of our stock treated as held by the U.S. Holder (including any stock constructively owned by the U.S. Holder as a result of owning Listed Warrants) both before and after the redemption. The redemption of Common Stock will generally be treated as a sale of the Common Stock (rather than as a corporate distribution) if the redemption (1) is "substantially disproportionate" with respect to the U.S. Holder, (2) results in a "complete termination" of the U.S. Holder's interest in us or (3) is "not essentially equivalent to a dividend" with respect to the U.S. Holder. These tests are explained more fully below.

In determining whether any of the foregoing tests are satisfied, a U.S. Holder takes into account not only stock actually owned by the U.S. Holder, but also shares of our stock that are constructively owned by it. A U.S. Holder may constructively own, in addition to stock owned directly, stock owned by certain related individuals and entities in which the U.S. Holder has an interest or that have an interest in such U.S. Holder, as well as any stock the U.S. Holder has a right to acquire by exercise of an option, which would generally include Common Stock which could be acquired pursuant to the exercise of the Listed Warrants. A redemption of a U.S. Holder's stock will be substantially disproportionate with respect to the U.S. Holder if the percentage of our outstanding voting stock actually and constructively owned by the U.S. Holder immediately following the redemption of Common Stock is, among other requirements, less than 80% of the percentage of our outstanding voting stock actually and constructively owned by the U.S. Holder immediately before the redemption. There will be a complete termination of a U.S. Holder's interest if either (1) all of the shares of our stock actually and constructively owned by the U.S. Holder are redeemed or (2) all of the shares of our stock actually owned by the U.S. Holder are redeemed and the U.S. Holder is eligible to waive, and effectively waives in accordance with specific rules, the attribution of stock owned by certain family members and the U.S. Holder does not constructively own any other stock (including any stock constructively owned by the U.S. Holder as a result of owning Listed Warrants). The redemption of the Common Stock will not be essentially equivalent to a dividend if the redemption results in a "meaningful reduction" of the U.S. Holder's proportionate interest in us. Whether the redemption will result in a meaningful reduction in a U.S. Holder's proportionate interest in us will depend on the particular facts and circumstances. The IRS has indicated in a published ruling that even a small reduction in the proportionate interest of a small minority stockholder in a publicly held corporation who exercises no control over corporate affairs may constitute such a "meaningful reduction." A U.S. Holder is urged to consult its tax advisors as to the tax consequences of a redemption, including the application of the constructive ownership rules described above.

If none of the foregoing tests is satisfied, the redemption will be treated as a corporate distribution, the tax consequences of which are described under “U.S. Holders—Taxation of Distributions,” above. After the application of those rules, any remaining tax basis of the U.S. Holder in the redeemed Common Stock should be added to the U.S. Holder’s adjusted tax basis in its remaining stock, or, if it has none, to the U.S. Holder’s adjusted tax basis in its warrants or possibly in other stock constructively owned by it.

Exercise of a Warrant

Except as discussed below with respect to the cashless exercise of a Warrant, a U.S. Holder will not recognize gain or loss upon the exercise of a Warrant. The U.S. Holder’s tax basis in the share of our Common Stock received upon exercise of the Warrant will generally be an amount equal to the sum of the U.S. Holder’s initial investment in the Warrant and the exercise price of such Warrant. It is unclear whether a U.S. Holder’s holding period for the Common Stock received upon exercise of the Warrant would commence on the date of exercise of the Warrant or the day following the date of exercise of the Warrant; however, in either case the holding period will not include the period during which the U.S. Holder held the Listed Warrants.

The tax consequences of a cashless exercise of a Warrant are not clear under current tax law. A cashless exercise may be nontaxable, either because the exercise is not a realization event or because the exercise is treated as a recapitalization for U.S. federal income tax purposes. In either situation, a U.S. Holder’s tax basis in the Common Stock received would generally equal the holder’s tax basis in the Warrant. If the cashless exercise were treated as not being a realization event, it is unclear whether a U.S. Holder’s holding period for the Common Stock would commence on the date of exercise of the Warrant or the day following the date of exercise of the Warrant. If, however, the cashless exercise were treated as a recapitalization, the holding period of the Common Stock would include the holding period of the Warrant.

It is also possible that a cashless exercise could be treated as a taxable exchange in which gain or loss is recognized. In such event, a U.S. Holder would be deemed to have surrendered a number of Listed Warrants having a fair market value equal to the exercise price. The U.S. Holder would recognize capital gain or loss in an amount equal to the difference between the fair market value of the Common Stock represented by the Listed Warrants deemed surrendered and the U.S. Holder’s tax basis in the Listed Warrants deemed surrendered. In this case, a U.S. Holder’s tax basis in the Common Stock received would equal the sum of the U.S. Holder’s initial investment in the Listed Warrants exercised and the exercise price of such Listed Warrants. It is unclear whether a U.S. Holder’s holding period for the Common Stock would commence on the date of exercise of the Warrant or the day following the date of exercise of the Warrant; however, in either case the holding period will not include the period during which the U.S. Holder held the Listed Warrants.

Due to the absence of authority on the U.S. federal income tax treatment of a cashless exercise, including when a U.S. Holder’s holding period would commence with respect to the Common Stock received, there can be no assurance which, if any, of the alternative tax consequences and holding periods described above would be adopted by the IRS or a court of law. Accordingly, U.S.

Holders are urged to consult their tax advisors regarding the tax consequences of a cashless exercise.

Sale, Exchange, Redemption or Expiration of a Warrant

Upon a sale, exchange (other than by exercise), redemption (other than a redemption for Common Stock), or expiration of a Warrant, a U.S. Holder will recognize taxable gain or loss in an amount equal to the difference between (1) the amount realized upon such disposition or expiration and (2) the U.S. Holder's tax basis in the Warrant. Such gain or loss will generally be treated as long-term capital gain or loss if the Warrant is held by the U.S. Holder for more than one year at the time of such disposition or expiration. If a Warrant is allowed to lapse unexercised, a U.S. Holder generally will recognize a capital loss equal to such holder's tax basis in the Warrant. The deductibility of capital losses is subject to certain limitations.

A redemption of Listed Warrants for Common Stock described in this prospectus under "Description of Securities—Warrants" should be treated as a "recapitalization" within the meaning of Section 368(a)(1) (E) of the Code. Accordingly, you should not recognize any gain or loss on the redemption of Listed Warrants for shares of our Common Stock. Your aggregate tax basis in the shares of Common Stock received in the redemption should equal your aggregate tax basis in your Listed Warrants redeemed and your holding period for the shares of Common Stock received in redemption of your Listed Warrants should include your holding period for your surrendered Listed Warrants.

Possible Constructive Distributions

The terms of each Warrant provide for an adjustment to the number of shares of Common Stock for which the Warrant may be exercised or to the exercise price of the Warrant in certain events, as discussed in the section of this prospectus captioned "Description of Securities—Warrants." An adjustment which has the effect of preventing dilution is generally not a taxable event. Nevertheless, a U.S. Holder of Listed Warrants would be treated as receiving a constructive distribution from us if, for example, the adjustment increases the holder's proportionate interest in our assets or earnings and profits (e.g., through an increase in the number of shares of Common Stock that would be obtained upon exercise) as a result of a distribution of cash to the holders of shares of our Common Stock which is taxable to such holders as a distribution as described under "U.S. Holders—Taxation of Distributions" above. Such constructive distribution would be subject to tax as described under that section in the same manner as if such U.S. Holder received a cash distribution from us equal to the fair market value of such increased interest.

Non-U.S. Holders

Taxation of Distributions

In general, any distributions (including constructive distributions) we make to a non-U.S. Holder of shares of our Common Stock, to the extent paid out of our current or accumulated earnings and profits (as determined under U.S. federal income tax principles), will constitute dividends for U.S. federal income tax purposes and, provided such dividends are not effectively connected with the

non-U.S. Holder's conduct of a trade or business within the United States, we will be required to withhold tax from the gross amount of the dividend at a rate of 30%, unless such non-U.S. Holder is eligible for a reduced rate of withholding tax under an applicable income tax treaty and provides proper certification of its eligibility for such reduced rate (usually on an IRS Form W-8BEN or W-8BEN-E, as applicable). In the case of any constructive dividend, it is possible that this tax would be withheld from any amount owed to a non-U.S. Holder by the applicable withholding agent, including cash distributions on other property or sale proceeds from Listed Warrants or other property subsequently paid or credited to such holder. Any distribution not constituting a dividend will be treated first as reducing (but not below zero) the non-U.S. Holder's adjusted tax basis in its shares of our Common Stock and, to the extent such distribution exceeds the non-U.S. Holder's adjusted tax basis, as gain realized from the sale or other disposition of the Common Stock, which will be treated as described under "Non-U.S. Holders—Gain on Sale, Taxable Exchange or Other Taxable Disposition of Common Stock and Warrants" below. In addition, if we determine that we are classified as a "United States real property holding corporation" (see "Non-U.S. Holders—Gain on Sale, Taxable Exchange or Other Taxable Disposition of Common Stock and Warrants" below), we will withhold 15% of any distribution that exceeds our current and accumulated earnings and profits.

Dividends we pay to a non-U.S. Holder that are effectively connected with such non-U.S. Holder's conduct of a trade or business within the United States (or if a tax treaty applies are attributable to a U.S. permanent establishment or fixed base maintained by the non-U.S. Holder) will generally not be subject to U.S. withholding tax, provided such non-U.S. Holder complies with certain certification and disclosure requirements (usually by providing an IRS Form W-8ECI). Instead, such dividends will generally be subject to U.S. federal income tax, net of certain deductions, at the same graduated individual or corporate rates applicable to U.S. Holders. If the non-U.S. Holder is a corporation, dividends that are effectively connected income may also be subject to a "branch profits tax" at a rate of 30% (or such lower rate as may be specified by an applicable income tax treaty).

Exercise of a Warrant

The U.S. federal income tax treatment of a non-U.S. Holder's exercise of a Warrant generally will correspond to the U.S. federal income tax treatment of the exercise of a Warrant by a U.S. Holder, as described under "U.S. Holders—Exercise of a Warrant" above, although to the extent a cashless exercise results in a taxable exchange, the tax consequences to the non-U.S. Holder would be the same as those described below in "Non-U.S. Holders—Gain on Sale, Exchange or Other Taxable Disposition of Common Stock and Warrants."

Redemption of Warrants for Common Stock

The U.S. federal income tax treatment to a non-U.S. Holder upon a redemption of Listed Warrants for Common Stock described in this prospectus under "Description of Securities—Warrants" generally will correspond to the U.S. federal income tax treatment to a U.S. Holder, as described in the second paragraph under "U.S. Holders—Sale, Exchange, Redemption or Expiration of a Warrant."

Gain on Sale, Exchange or Other Taxable Disposition of Common Stock and Warrants

A non-U.S. Holder will generally not be subject to U.S. federal income or withholding tax in respect of gain recognized on a sale, taxable exchange or other taxable disposition of our Common Stock or a sale, taxable exchange, expiration, redemption or other taxable disposition of our Listed Warrants unless:

- the gain is effectively connected with the conduct of a trade or business by the non-U.S. Holder within the United States (and, if an applicable tax treaty so requires, is attributable to a U.S. permanent establishment or fixed base maintained by the non-U.S. Holder);
- the non-U.S. Holder is an individual who is present in the United States for 183 days or more in the taxable year of disposition and certain other conditions are met; or
- we are or have been a “United States real property holding corporation” for U.S. federal income tax purposes at any time during the shorter of the five-year period ending on the date of disposition or the period that the non-U.S. Holder held our Common Stock, and, in the case where shares of our Common Stock are regularly traded on an established securities market, the non-U.S. Holder has owned, directly or constructively, more than 5% of our Common Stock at any time within the shorter of the five-year period preceding the disposition or such non-U.S. Holder’s holding period for the shares of our Common Stock. There can be no assurance that our Common Stock will be treated as regularly traded on an established securities market for this purpose.

Gain described in the first bullet point above will be subject to tax at generally applicable U.S. federal income tax rates. Any gains described in the first bullet point above of a non-U.S. Holder that is a foreign corporation may also be subject to an additional “branch profits tax” at a 30% rate (or lower applicable treaty rate). Gain described in the second bullet point above will generally be subject to a flat 30% U.S. federal income tax. Non-U.S. Holders are urged to consult their tax advisors regarding possible eligibility for benefits under income tax treaties.

If the third bullet point above applies to a non-U.S. Holder, gain recognized by such holder on the sale, exchange or other disposition of our Common Stock or Listed Warrants will be subject to tax at generally applicable U.S. federal income tax rates. In addition, a buyer of our Common Stock or Listed Warrants from such holder may be required to withhold U.S. income tax at a rate of 15% of the amount realized upon such disposition. We will be classified as a United States real property holding corporation if the fair market value of our “United States real property interests” equals or exceeds 50% of the sum of the fair market value of our worldwide real property interests plus our other assets used or held for use in a trade or business, as determined for U.S. federal income tax purposes. We do not believe we currently are or will become a United States real property holding corporation, however there can be no assurance in this regard. Non-U.S. Holders are urged to consult their tax advisors regarding the application of these rules.

Possible Constructive Distributions

The terms of each Warrant provide for an adjustment to the number of shares of Common Stock for which the Warrant may be exercised or to the exercise price of the Warrant in certain events, as discussed in the section of this prospectus captioned “Description of Securities—Warrants.” An

adjustment which has the effect of preventing dilution is generally not a taxable event. Nevertheless, a non-U.S. Holder of Listed Warrants would be treated as receiving a constructive distribution from us if, for example, the adjustment increases the holder's proportionate interest in our assets or earnings and profits (e.g., through an increase in the number of shares of Common Stock that would be obtained upon exercise) as a result of a distribution of cash to the holders of shares of our Common Stock which is taxable to such holders as a distribution, as described under "Non-U.S. Holders—Taxation of Distributions" above. A non-U.S. Holder would be subject to U.S. federal income tax withholding under that section in the same manner as if such non-U.S. Holder received a cash distribution from us equal to the fair market value of such increased interest without any corresponding receipt of cash.

Redemption of Common Stock

The characterization for U.S. federal income tax purposes of the redemption of a non-U.S. Holder's Common Stock will generally correspond to the U.S. federal income tax characterization of such a redemption of a U.S. Holder's Common Stock, as described under "U.S. Holders—Redemption of Common Stock" above, and the consequences of the redemption to the non-U.S. Holder will be as described above under "Non-U.S. Holders—Taxation of Distributions" and "Non-U.S. Holders—Gain on Sale, Exchange or Other Taxable Disposition of Common Stock and Warrants," as applicable.

Foreign Account Tax Compliance Act

Sections 1471 through 1474 of the Code and the Treasury Regulations and administrative guidance promulgated thereunder (commonly referred as the "Foreign Account Tax Compliance Act" or "FATCA") generally impose withholding at a rate of 30% in certain circumstances on dividends in respect of, and the gross proceeds of dispositions of, our securities which are held by or through certain foreign financial institutions (including investment funds), unless any such institution (1) enters into, and complies with, an agreement with the IRS to report, on an annual basis, information with respect to interests in, and accounts maintained by, the institution that are owned by certain U.S. persons and by certain non-U.S. entities that are wholly or partially owned by U.S. persons and to withhold on certain payments, or (2) if required under an intergovernmental agreement between the United States and an applicable foreign country, reports such information to its local tax authority, which will exchange such information with the U.S. authorities. Under proposed Treasury Regulations promulgated by the Treasury Department on December 13, 2018, which state that taxpayers may rely on the proposed Treasury Regulations until final Treasury Regulations are issued, this withholding tax will not apply to the gross proceeds from the sale or disposition of our securities. An intergovernmental agreement between the United States and an applicable foreign country may modify these requirements. Accordingly, the entity through which our securities are held will affect the determination of whether such withholding is required. Similarly, dividends in respect of our securities held by an investor that is a non-financial non-U.S. entity that does not qualify under certain exceptions will generally be subject to withholding at a rate of 30%, unless such entity either (1) certifies to us or the applicable withholding agent that such entity does not have any "substantial United States owners" or (2) provides certain information regarding the entity's "substantial United States owners," which will in turn be

provided to the U.S. Department of Treasury. Prospective investors should consult their tax advisors regarding the possible implications of FATCA on their investment in our securities.

SELLING SECURITYHOLDER

The shares of Common Stock being offered by the Selling Securityholder are those issuable to the Selling Securityholder upon conversion of the Notes and exercise of the Warrants. We are registering the resale of such shares of Common Stock in order to permit the Selling Securityholder to offer the shares for resale from time to time. Except for the ownership of the Notes and the Warrants issued pursuant to the SPA and our entry into the previously disclosed Common Stock Purchase Agreement, dated August 23, 2022 (the “CSPA”), with Tumim Stone Capital LLC (“Tumim”), an affiliate of the Selling Securityholder, the Selling Securityholder has not had any material relationship with us within the past three years. As used in this prospectus, the term “Selling Securityholder” means 3i, LP.

The table below lists the Selling Securityholder and other information regarding the beneficial ownership (as determined under Section 13(d) of the Exchange Act, and the rules and regulations thereunder) of the shares of Common Stock held by the Selling Securityholder. The second column lists the number of shares of Common Stock beneficially owned by the Selling Securityholder, as of November 27, 2023, assuming conversion of the Notes and exercise of the Warrants held by the Selling Securityholder on that date but taking account of any limitations on conversion and exercise set forth therein.

The third column lists the shares of Common Stock being offered by this prospectus by the Selling Securityholder and does not take in account any limitations on (i) conversion of the Notes set forth therein and (ii) exercise of the Warrants set forth therein.

In accordance with the terms of that certain Registration Rights Agreement, dated March 15, 2023, by and between the Company and the Selling Securityholder, as amended (the “Registration Rights Agreement”), this prospectus generally covers the resale of 100% of the maximum number of shares of (i) Common Stock issued or issuable pursuant to the Notes, including payment of interest on the Notes through their maturity date, determined as if the outstanding Notes (including interest on the Notes through their maturity date) were converted in full and (ii) Common Stock issued or issuable upon exercise of the Warrants (in each case, without regard to any limitations on conversion and exercise contained therein solely for the purpose of such calculation) at the floor price of \$0.43 or an exercise price of \$2.97. Because the conversion price of the Notes and the exercise price of the Warrants may be adjusted, the number of shares that will actually be issued may be more or less than the number of shares being offered by this prospectus. The fourth column assumes the sale of all of the Shares offered by the Selling Securityholder pursuant to this prospectus.

Under the terms of the Notes and the Warrants, the Selling Securityholder may not convert the Notes or exercise the Warrants to the extent (but only to the extent) such Selling Securityholder or any of its affiliates would beneficially own a number of shares of our Common Stock which would exceed 4.99% of the outstanding shares of the Company (the “Beneficial Ownership Limitation”). The Beneficial Ownership Limitation may be increased or decreased, provided that in no event shall it exceed 9.99%, upon notice to us, provided that any increase in the beneficial ownership limitation shall not be effective until 61 days following the receipt of such notice by us. The

number of shares in the second column reflects these limitations. The Selling Securityholder may sell all, some or none of their shares in this offering. See “Plan of Distribution” below.

The ownership percentage indicated in the following table is based on 42,122,309 total outstanding shares of our Common Stock as of November 27, 2023.

In computing the number of shares of Common Stock beneficially owned by the Selling Securityholder and the percentage ownership, we included outstanding shares of Common Stock issuable upon conversion of the Notes and exercise of the Warrants that are currently exercisable or exercisable within 60 days of November 27, 2023.

Name	Shares of Common Stock				
	Shares Beneficially Owned Prior to the Offering		Maximum Number of Shares Being Registered for Resale ⁽³⁾	Shares Beneficially Owned After the Offering	
	Shares ⁽²⁾	Percentage		Number of Shares ⁽⁴⁾	Percentage
3i, LP ⁽¹⁾	18,524,399	30.7%	18,183,659	340,740	*

- * Less than 1 percent.
- (1) The business address of 3i, LP is 2 Wooster Street, 2nd Floor, New York, NY 10013. 3i, LP’s principal business is that of a private investor. Maier Joshua Tarlow is the manager of 3i Management, LLC, the general partner of 3i, LP, and has sole voting control and investment discretion over securities beneficially owned directly or indirectly by 3i Management, LLC and 3i, LP. Mr. Tarlow disclaims any beneficial ownership of the securities beneficially owned directly by 3i, LP and indirectly by 3i Management, LLC.
- (2) Includes (i) 340,740 shares of Common Stock, (ii) 7,720,784 shares of Common Stock subject to warrants exercisable within 60 days of November 27, 2023, and (iii) 10,462,875 shares of Common Stock subject to convertible notes.
- (3) Represents aggregate of 18,183,659 shares of Common Stock issuable to the Selling Securityholder upon conversion of the Notes and exercise of the Warrants. The Selling Securityholder disclaims beneficial ownership over these securities.
- (4) Assumes the sale of all shares offered pursuant to this prospectus. In accordance with the SPA, in no event are we permitted to issue shares of Common Stock to the Selling Securityholder in excess of the Beneficial Ownership Limitation. Beneficial ownership of the Selling Securityholder included in this Selling Securityholders table reflects the total number of shares potentially issuable upon conversion of the note and exercise of the warrant and does not give effect to the Beneficial Ownership Limitation. Accordingly, actual beneficial ownership, as calculated in accordance with Section 13(d) of the Exchange Act and Rule 13d-3 thereunder, may be lower than as reflected in this table.

PLAN OF DISTRIBUTION

We are registering the resale of shares of Common Stock issuable upon conversion of the Notes and exercise of the Warrants to permit the resale of these shares of Common Stock by the holder of the Notes and the Warrants from time to time after the date of this prospectus. We will not receive any of the proceeds from the sale by the Selling Securityholder of the shares of Common Stock, although we will receive the exercise price of any Warrants not exercised by the Selling Securityholders on a cashless exercise basis. We will bear all fees and expenses incident to our obligation to register the shares of Common Stock.

The Selling Securityholder may sell all or a portion of the shares of Common Stock held by it and offered hereby from time to time directly or through one or more underwriters, broker-dealers or agents. If the shares of Common Stock are sold through underwriters or broker-dealers, the Selling Securityholder will be responsible for underwriting discounts or commissions or agent's commissions. The shares of Common Stock may be sold in one or more transactions at fixed prices, at prevailing market prices at the time of the sale, at varying prices determined at the time of sale or at negotiated prices. These sales may be effected in transactions, which may involve crosses or block transactions, pursuant to one or more of the following methods:

- on any national securities exchange or quotation service on which the securities may be listed or quoted at the time of sale;
- in the over-the-counter market;
- in transactions otherwise than on these exchanges or systems or in the over-the-counter market;
- through the writing or settlement of options, whether such options are listed on an options exchange or otherwise;
- ordinary brokerage transactions and transactions in which the broker-dealer solicits purchasers;
- block trades in which the broker-dealer will attempt to sell the shares as agent but may position and resell a portion of the block as principal to facilitate the transaction;
- purchases by a broker-dealer as principal and resale by the broker-dealer for its account;
- an exchange distribution in accordance with the rules of the applicable exchange;
- privately negotiated transactions;
- short sales made after the date the Registration Statement is declared effective by the SEC;
- broker-dealers may agree with a selling security holder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of sale; and
- any other method permitted pursuant to applicable law.

The Selling Securityholder may also sell shares of Common Stock under Rule 144 promulgated under the Securities Act of 1933, as amended, if available, rather than under this prospectus. In addition, the Selling Securityholder may transfer the shares of Common Stock by other means not described in this prospectus. If the Selling Securityholder effects such transactions by selling shares of Common Stock to or through underwriters, broker-dealers or agents, such underwriters, broker-dealers or agents may receive commissions in the form of discounts, concessions or

commissions from the Selling Securityholder or commissions from purchasers of the shares of Common Stock for whom they may act as agent or to whom they may sell as principal (which discounts, concessions or commissions as to particular underwriters, broker-dealers or agents may be in excess of those customary in the types of transactions involved). In connection with sales of the shares of Common Stock or otherwise, the Selling Securityholder may enter into hedging transactions with broker-dealers, which may in turn engage in short sales of the shares of Common Stock in the course of hedging in positions they assume. The Selling Securityholder may also sell shares of Common Stock short and deliver shares of Common Stock covered by this prospectus to close out short positions and to return borrowed shares in connection with such short sales. The Selling Securityholder may also loan or pledge shares of Common Stock to broker-dealers that in turn may sell such shares.

The Selling Securityholder may pledge or grant a security interest in some or all of the Notes, Warrants or shares of Common Stock owned by them and, if they default in the performance of their secured obligations, the pledgees or secured parties may offer and sell the shares of Common Stock from time to time pursuant to this prospectus or any amendment to this prospectus under Rule 424(b)(3) or other applicable provision of the Securities Act amending, if necessary, the list of Selling Securityholders to include the pledgee, transferee or other successors in interest as a Selling Securityholder under this prospectus. The Selling Securityholder also may transfer and donate the shares of Common Stock in other circumstances in which case the transferees, donees, pledgees or other successors in interest will be the selling beneficial owners for purposes of this prospectus.

To the extent required by the Securities Act and the rules and regulations thereunder, the Selling Securityholder and any broker-dealer participating in the distribution of the shares of Common Stock may be deemed to be "underwriters" within the meaning of the Securities Act, and any commission paid, or any discounts or concessions allowed to, any such broker-dealer may be deemed to be underwriting commissions or discounts under the Securities Act. At the time a particular offering of the shares of Common Stock is made, a prospectus supplement, if required, will be distributed, which will set forth the aggregate amount of shares of Common Stock being offered and the terms of the offering, including the name or names of any broker-dealers or agents, any discounts, commissions and other terms constituting compensation from the Selling Securityholder and any discounts, commissions or concessions allowed or re-allowed or paid to broker-dealers.

Brokers, dealers, underwriters or agents participating in the distribution of the shares of our Common Stock offered by this prospectus may receive compensation in the form of commissions, discounts, or concessions from the purchasers, for whom the broker-dealers may act as agent, of the shares sold by the Selling Securityholder through this prospectus. The compensation paid to any such particular broker-dealer by any such purchasers of shares of our Common Stock sold by the Selling Securityholder may be less than or in excess of customary commissions. Neither we nor the Selling Securityholder can presently estimate the amount of compensation that any agent will receive from any purchasers of shares of our Common Stock sold by the Selling Securityholder.

The Selling Securityholder and any other person participating in such distribution will be subject to applicable provisions of the Securities Exchange Act of 1934, as amended, and the rules and regulations thereunder, including, without limitation, to the extent applicable, Regulation M of the Exchange Act, which may limit the timing of purchases and sales of any of the shares of Common Stock by the Selling Securityholder and any other participating person. To the extent applicable, Regulation M may also restrict the ability of any person engaged in the distribution of the shares of Common Stock to engage in market-making activities with respect to the shares of Common Stock. All of the foregoing may affect the marketability of the shares of Common Stock and the ability of any person or entity to engage in market-making activities with respect to the shares of Common Stock.

We will pay all expenses of the registration of the shares of Common Stock pursuant to the Registration Rights Agreement, estimated to be \$50,000 in total, including, without limitation, SEC filing fees and expenses of compliance with state securities or "blue sky" laws; provided, however, a Selling Securityholder will pay all underwriting discounts and selling commissions, if any. We will indemnify the Selling Securityholder against liabilities, including some liabilities under the Securities Act in accordance with the registration rights agreements or the Selling Securityholder will be entitled to contribution. We may be indemnified by the Selling Securityholder against civil liabilities, including liabilities under the Securities Act that may arise from any written information furnished to us by the Selling Securityholder specifically for use in this prospectus, in accordance with the related registration rights agreements or we may be entitled to contribution.

Once sold under the registration statement, of which this prospectus forms a part, the shares of Common Stock will be freely tradable in the hands of persons other than our affiliates.

LEGAL MATTERS

The validity of the Shares have been passed upon by Morgan Lewis Bockius LLP, Palo Alto, California.

EXPERTS

The consolidated financial statements as of December 31, 2022 and 2021, and for each of the years then ended incorporated by reference in this prospectus have been so incorporated in reliance on the report of Armanino LLP an independent registered public accounting firm, incorporated herein by reference, given on the authority of said firm as experts in auditing and accounting. The report on the consolidated financial statements contains an explanatory paragraph regarding the Company's ability to continue as a going concern.

WHERE YOU CAN FIND MORE INFORMATION

This prospectus is part of the registration statement on Form S-3 we filed with the SEC under the Securities Act and does not contain all of the information set forth or incorporated by reference in the registration statement and the exhibits to the registration statement. For further information with respect to us and the securities we are offering under this prospectus, we refer you to the registration statement and the exhibits and schedules filed as a part of the registration statement. We file annual, quarterly, and current reports, proxy statements and other information with the SEC. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC, including SeaStar Medical Holding Corporation. The address of the SEC website is www.sec.gov.

We maintain a website at www.SeaStarmedical.com. Information contained in or accessible through our website does not constitute a part of this prospectus.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to "incorporate by reference" information into this prospectus, which means that we can disclose important information to you by referring you to another document filed separately with the SEC. The SEC file number for the documents incorporated by reference in this prospectus is 001-39927. The documents incorporated by reference into this prospectus contain important information about us that you should read.

The following documents are incorporated by reference into this document:

- our Annual Report on Form 10-K for the year ended December 31, 2022, filed with the SEC on [March 30, 2023](#), and as amended on Form 10-K/A, filed with the SEC on [April 28, 2023](#);
- our Quarterly Reports on Form 10-Q for the quarters ended March 31, 2023, June 30, 2023, and September 30, 2023, filed with the SEC on [May 15, 2023](#), [August 14, 2023](#), and [November 14, 2023](#), respectively;
- our Current Reports on Form 8-K filed with the SEC on [January 9, 2023](#) (with respect to Item 8.01 only), [February 9, 2023](#) (with respect to Item 8.01 only), [February 15, 2023](#) (with respect to Item 8.01 only), [March 16, 2023](#) (with respect

to Items 1.01, 2.03, and 3.02 only), [May 9, 2023](#) (with respect to Item 8.01 only), [June 9, 2023](#), [June 16, 2023](#), [June 30, 2023](#), [August 2, 2023](#) (with respect to Item 4.01 only), [August 8, 2023](#) (with respect to Items 1.01, 2.03 and 3.02 only), [August 30, 2023](#) (with respect to Items 1.01, 2.03, and 3.02 only), [September 8, 2023](#), [September 20, 2023](#) (with respect to Item 5.03 only), [September 26, 2023](#), [October 3, 2023](#) (with respect to Item 8.01 only), [October 30, 2023](#) (with respect to Item 8.01 only), and [November 27, 2023](#); and

- the description of our Common Stock which is registered under Section 12 of the Exchange Act, in our registration statement on Form 8-A, filed on [January 22, 2021](#), including any amendments or reports filed for the purposes of updating this description.

We also incorporate by reference in to this prospectus all documents (other than Current Reports furnished under Item 2.02 or Item 7.01 of Form 8-K and exhibits filed on such form that are related to such items) that are filed by us with the SEC pursuant to Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including those made after the date of the initial filing of the registration statement of which this prospectus is a part and prior to effectiveness of such registration statement, as well as after the date of this prospectus until we file a post-effective amendment that indicates the termination of the offering of the shares of our Common Stock made by this prospectus and will become a part of this prospectus from the date that such documents are filed with the SEC. These documents include periodic reports, such as Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, and Current Reports on Form 8-K, as well as proxy statements.

We will provide to each person, including any beneficial owner, to whom a prospectus is delivered, without charge upon written or oral request, a copy of any or all of the documents that are incorporated by reference into this prospectus but not delivered with this prospectus, including exhibits which are specifically incorporated by reference into such documents. You should direct any requests for documents to SeaStar Medical Holding Corporation 3513 Brighton Blvd., Suite 410 Denver, CO 80216; telephone: (844) 427-8100.

Any statement contained herein or in a document incorporated or deemed to be incorporated by reference into this document will be deemed to be modified or superseded for purposes of the document to the extent that a statement contained in this document or any other subsequently filed document that is deemed to be incorporated by reference in to this document modifies or supersedes the statement.



Up to 18,183,659 Shares of Common Stock Offered by the Selling Securityholder

Prospectus

, 2023

You should rely only on the information contained or incorporated by reference in this prospectus. We have not authorized anyone to provide you with different information. You should not assume that the information contained or incorporated by reference in this prospectus is accurate as of any date other than the date of this prospectus. We are not making an offer of these securities in any state where the offer is not permitted.

PART II

INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the estimated costs and expenses payable by us in connection with the offering of the securities being registered. All the amounts shown are estimates, except for the SEC registration fee.

SEC registration fee	\$	1,100
Accounting fees and expenses	\$	20,000
Legal fees and expenses	\$	80,000
Printing and miscellaneous expenses	\$	10,000
Total	\$	<u>111,100</u>

Item 15. Indemnification of Directors and Officers.

Section 145 of the General Corporation Law of the State of Delaware (the "DGCL") provides, generally, that a corporation shall have the power to indemnify any person who was or is a party or is threatened to be made a party to any threatened, pending or completed action, suit or proceeding, whether civil, criminal, administrative or investigative (other than an action by or in the right of the corporation) by reason of the fact that such person is or was a director, officer, employee or agent of the corporation against all expenses, judgments, fines and amounts paid in settlement actually and reasonably incurred by such person in connection with such action, suit or proceeding if such person acted in good faith and in a manner such person reasonably believed to be in or not opposed to the best interests of the corporation and, with respect to any criminal action or proceeding, had no reasonable cause to believe his or her conduct was unlawful. A corporation may similarly indemnify such person for expenses actually and reasonably incurred by such person in connection with the defense or settlement of any action or suit by or in the right of the corporation, provided that such person acted in good faith and in a manner he or she reasonably believed to be in or not opposed to the best interests of the corporation, and, in the case of claims, issues and matters as to which such person shall have been adjudged liable to the corporation, provided that a court shall have determined, upon application, that, despite the adjudication of liability but in view of all of the circumstances of the case, such person is fairly and reasonably entitled to indemnity for such expenses which such court shall deem proper.

In accordance with Section 102(b)(7) of the DGCL, the Charter provides that a director will not be personally liable to us or our stockholders for monetary damages for breach of fiduciary duty as a director, except for liability (i) for any breach of the director's duty of loyalty to us or our stockholders, (ii) for acts or omissions not in good faith or which involve intentional misconduct or a knowing violation of law, (iii) under Section 174 of the DGCL, or (iv) for any transaction from which the director derived an improper personal benefit. No such provision shall eliminate or limit the liability of a director for any act or omission occurring prior to the date when such provision became effective. Accordingly, these provisions will have no effect on the availability

of equitable remedies such as an injunction or rescission based on a director's breach of his or her duty of care.

The Charter provides that we will indemnify our present and former directors and officers to the maximum extent permitted by the DGCL and that such indemnification will not be exclusive of any other rights to which those seeking indemnification may be entitled under any bylaw provision, agreement, vote of stockholders or disinterested directors or otherwise.

The Company entered, and expects to continue to enter into, indemnification agreements with its directors, executive officers, and other employees as determined by the Board. Each indemnification agreement provides for indemnification and advancements by the Company of certain expenses and costs, if the basis of the indemnitee's involvement was by reason of the fact that the indemnitee is or was a director, officer, employee, or agent of the Company or any of its subsidiaries or was serving at the Company's request in an official capacity for another entity, to the fullest extent permitted by the laws of the state of Delaware.

Item 16. Exhibits.

Exhibit Number	Description
<u>3.1</u>	<u>Third Amended and Restated Certificate of Incorporation of SeaStar Medical Holding Corporation, filed with the Secretary of State of Delaware on October 28, 2022 (incorporated by reference to Exhibit 3.1 to Form 8-K filed by the registrant on November 4, 2022).</u>
<u>3.2</u>	<u>Certificate of Amendment to the Third Amended and Restated Certificate of Incorporation of SeaStar Medical Holding Corporation (incorporated by reference to Exhibit 3.1 to Form 8-K filed by the registrant on September 20, 2023).</u>
<u>3.3</u>	<u>Amended and Restated Bylaws of SeaStar Medical Holding Corporation (incorporated by reference to Exhibit 3.2 to Form 8-K filed by the registrant on November 4, 2022).</u>
<u>4.1</u>	<u>Specimen Common Stock Certificate (incorporated by reference to Exhibit 4.1 to Form 8-K filed by the registrant on November 4, 2022).</u>
<u>4.2</u>	<u>Description of Securities (included under "Description of Securities" in Form S-1 filed by the registrant on January 20, 2023).</u>
<u>5.1**</u>	<u>Opinion of Morgan Lewis Bockius LLP.</u>
<u>10.1</u>	<u>Securities Purchase Agreement, dated March 15, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.1 to Form 8-K filed by the registrant on March 16, 2023).</u>

<u>10.2</u>	<u>Registration Rights Agreement, dated March 15, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.2 to Form 8-K filed by the registrant on March 16, 2023).</u>
<u>10.3</u>	<u>First Amendment to Securities Purchase Agreement, dated August 7, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.1 to Form 8-K filed by the registrant on August 8, 2023).</u>
<u>10.4</u>	<u>First Amendment to Registration Rights Agreement, dated August 7, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.2 to Form 8-K filed by the registrant on August 8, 2023).</u>
<u>10.5</u>	<u>Letter Agreement, dated August 7, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.3 to Form 8-K filed by the registrant on August 8, 2023).</u>
<u>10.6</u>	<u>Letter Agreement, dated August 30, 2023, by and between the registrant and 3i, LP (incorporated by reference to Exhibit 10.1 to Form 8-K filed by the registrant on August 30, 2023).</u>
<u>23.1**</u>	<u>Consent of Armanino LLP, independent registered public accounting firm.</u>
<u>23.2**</u>	<u>Consent of Morgan Lewis Bockius LLP (included in Exhibit 5.1).</u>
<u>24.1**</u>	<u>Power of Attorney (included on signature page).</u>
<u>107**</u>	<u>Filing Fee Table.</u>

** Filed herewith.

Item 17. Undertakings.

- (a) The undersigned registrant hereby undertakes:
- (1) To file, during any period in which offers or sales are being made, a post-effective amendment to this registration statement:
 - (i) To include any prospectus required by Section 10(a)(3) of the Securities Act;
 - (ii) To reflect in the prospectus any facts or events arising after the effective date of the registration statement (or the most recent post-effective amendment thereof) which, individually or in the aggregate, represent a fundamental change in the information set forth in the registration statement. Notwithstanding the foregoing, any increase or decrease in volume of securities offered (if the total dollar value of securities offered

would not exceed that which was registered) and any deviation from the low or high end of the estimated maximum offering range may be reflected in the form of prospectus filed with the SEC pursuant to Rule 424(b) if, in the aggregate, the changes in volume and price represent no more than a 20 percent change in the maximum aggregate offering price set forth in the "Calculation of Registration Fee" table in the effective registration statement; and

- (iii) To include any material information with respect to the plan of distribution not previously disclosed in the registration statement or any material change to such information in the registration statement;

provided, however, that the undertakings set forth in paragraphs (1)(i), (1)(ii) and (1)(iii) of this section do not apply if the information required to be included in a post-effective amendment by those paragraphs is contained in reports filed with or furnished to the SEC by the registrant pursuant to Section 13 or Section 15(d) of the Exchange Act that are incorporated by reference in this registration statement or are contained in a form of prospectus filed pursuant to Rule 424(b) that is part of this registration statement.

- (2) That, for the purpose of determining any liability under the Securities Act, each such post-effective amendment shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (3) To remove from registration by means of a post-effective amendment any of the securities being registered which remain unsold at the termination of the offering.
- (4) That, for the purpose of determining liability under the Securities Act to any purchaser:
 - (i) Each prospectus filed by the registrant pursuant to Rule 424(b)(3) shall be deemed to be part of the registration statement as of the date the filed prospectus was deemed part of and included in the registration statement; and
 - (ii) Each prospectus required to be filed pursuant to Rule 424(b)(2), (b)(5), or (b)(7) as part of a registration statement in reliance on Rule 430B relating to an offering made pursuant to Rule 415(a)(1)(i), (vii), or (x) for the purpose of providing the information required by Section 10(a) of the Securities Act shall be deemed to be part of and included in the registration statement as of the earlier of the date such form of prospectus is first used after effectiveness or the date of the first contract of sale of securities in the offering described in the prospectus. As provided in Rule 430B, for liability purposes of the issuer and any person that is at that date an underwriter, such date shall be deemed to be a new effective date of the registration statement relating to the securities in the registration statement to which that prospectus relates, and the offering of such securities at that time shall be

deemed to be the initial bona fide offering thereof. Provided, however, that no statement made in a registration statement or prospectus that is part of the registration statement or made in a document incorporated or deemed incorporated by reference into the registration statement or prospectus that is part of the registration statement will, as to a purchaser with a time of contract of sale prior to such effective date, supersede or modify any statement that was made in the registration statement or prospectus that was part of the registration statement or made in any such document immediately prior to such effective date.

- (5) That, for purposes of determining any liability under the Securities Act, each filing of the registrant's annual report pursuant to Section 13(a) or 15(d) of the Exchange Act (and, where applicable, each filing of an employee benefit plan's annual report pursuant to Section 15(d) of the Exchange Act) that is incorporated by reference in the registration statement shall be deemed to be a new registration statement relating to the securities offered therein, and the offering of such securities at that time shall be deemed to be the initial bona fide offering thereof.
- (b) Insofar as indemnification for liabilities arising under the Securities Act of 1933 may be permitted to directors, officers and controlling persons of the registrant pursuant to the foregoing provisions, or otherwise, the registrant has been advised that in the opinion of the Securities and Exchange Commission such indemnification is against public policy as expressed in the Act and is, therefore, unenforceable. In the event that a claim for indemnification against such liabilities (other than the payment by the registrant of expenses incurred or paid by a director, officer or controlling person of the registrant in the successful defense of any action, suit or proceeding) is asserted by such director, officer or controlling person in connection with the securities being registered, the registrant will, unless in the opinion of its counsel the matter has been settled by controlling precedent, submit to a court of appropriate jurisdiction the question whether such indemnification by it is against public policy as expressed in the Act and will be governed by the final adjudication of such issue.

SIGNATURES

Pursuant to the requirements of the Securities Act of 1933, as amended, the Registrant certifies that it has reasonable grounds to believe that it meets all of the requirements for filing on Form S-3 and has duly caused this Registration Statement to be signed on its behalf by the undersigned, thereunto duly authorized, in the City of Denver, Colorado, on December 1, 2023.

SEASTAR MEDICAL HOLDING CORPORATION

By: /s/ Eric Schlorff
Name: Eric Schlorff
Title: Chief Executive Officer

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Eric Schlorff, as his or her true and lawful attorney-in-fact and agent, with the full power of substitution and resubstitution, for him or her and in his or her name, place or stead, in any and all capacities, to sign any and all amendments (including post-effective amendments, exhibits thereto and other documents in connection therewith) to this Registration Statement, and to sign any registration statement for the same offering covered by this registration statement that is to be effective upon filing pursuant to Rule 462 of the Securities Act of 1933, as amended, and to file the same, with all exhibits thereto and other documents in connection therewith, with the SEC, granting unto said attorney-in-fact and agent, full power and authority to do and perform each and every act and thing requisite and necessary to be done in connection therewith, as fully to all intents and purposes as he or she might or could do in person, hereby ratifying and confirming that the attorney-in-fact and agent, or his substitute or substitutes, may lawfully do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Act of 1933, as amended, this Registration Statement has been signed by the following persons in the capacity and on the dates indicated.

Name	Title	Date
<u>/s/ Eric Schlorff</u> Eric Schlorff	Chief Executive Officer and Director (Principal Executive Officer)	December 1, 2023
<u>/s/ Caryl Baron</u> Caryl Baron	Interim Chief Financial Officer (Principal Financial and Accounting Officer)	December 1, 2023
<u>/s/ Rick Barnett</u> Rick Barnett	Chairman of the Board of Directors	December 1, 2023
<u>/s/ Kenneth Van Heel</u> Kenneth Van Heel	Director	December 1, 2023

/s/ Andres Lobo Director
Andres Lobo

December 1, 2023

/s/ Allan Collins Director
Allan Collins

December 1, 2023

/s/ Bruce Rodgers Director
Bruce Rodgers

December 1, 2023

/s/ Richard Russell Director
Richard Russell

December 1, 2023