

**NOTICE & PROXY STATEMENT**

**2025 Special Meeting of Stockholders**

March 20, 2025

10 am MDT



**SeaStar Medical Holding Corporation**  
**3513 Brighton Blvd, Suite 410**  
**Denver, CO 80216**

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February 28, 2025

To Our Stockholders:

You are cordially invited to attend the 2025 Special Meeting of Stockholders (the “Special Meeting”) of SeaStar Medical Holding Corporation at 10 am MDT, on Thursday, March 20, 2025. The Special Meeting will be held virtually, and no physical meeting will be held.

The Notice of Special Meeting of Stockholders and Proxy Statement on the following pages describe the matters to be presented at the Special Meeting. Please see the section titled “Who can attend the Special Meeting?” on page 3 of the Proxy Statement for more information about how to attend the meeting online.

Whether or not you attend the Special Meeting, it is important that your shares and votes are represented. Therefore, I urge you to promptly vote. Instructions for how to vote are contained on the enclosed proxy card. You can submit your vote by phone, via the Internet, or by signing, dating and returning the enclosed proxy card in the enclosed envelope, which requires no postage if mailed in the United States. If you decide to attend the virtual Special Meeting, you will be able to vote online at the Special Meeting even if you have previously submitted your proxy card.

Thank you for your support.

Sincerely,

/s/ Eric Schlorff

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Eric Schlorff

Director and Chief Executive Officer

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**SeaStar Medical Holding Corporation**  
**3513 Brighton Blvd, Suite 410**  
**Denver, CO 80216**

**Notice of Special Meeting of Stockholders to Be Held Thursday, March 20, 2025**

The Special Meeting of Stockholders of SeaStar Medical Holding Corporation, a Delaware corporation (the “Company”), will be held at 10 am MDT, on Thursday, March 20, 2025. The Special Meeting will be held virtually via live webcast. You will be able to attend the Special Meeting online by visiting [www.proxydocs.com/ICU](http://www.proxydocs.com/ICU). You will be able to submit questions at the meeting and vote. The Special Meeting will be held for the following purposes:

- To approve, for purposes of complying with Nasdaq Listing Rule 5635(d), the issuance of Common Warrants and Common Warrant Shares upon the exercise thereof (the “Common Warrants Proposal”);
- To approve, for purposes of complying with Nasdaq Listing Rule 5635(d), the extension of the term of the Company’s Series B Warrants (the “Warrant Amendment Proposal”); and
- To approve a proposal to adjourn or postpone the Special Meeting to a later date or dates, if necessary, to permit further solicitation and vote of proxies if there are insufficient votes for, or otherwise in connection with, the approval of the Common Warrants Proposal and Warrant Amendment Proposal (the “Adjournment Proposal”).

Holders of record of the Company’s common stock as of the close of business on January 31, 2025, are entitled to notice of and to vote at the Special Meeting, or at any continuation, postponement or adjournment of the Special Meeting. The Special Meeting may be continued or adjourned from time to time without notice other than by announcement at the Special Meeting.

It is important that your shares be represented regardless of the number of shares you may hold. Whether or not you plan to attend the Special Meeting, we urge you to vote your shares via the toll-free telephone number or over the Internet, as described in the enclosed materials. If you received a copy of the proxy card by mail, you may sign, date and mail the proxy card in the enclosed return envelope. Promptly voting your shares will ensure the presence of a quorum at the Special Meeting and will save us the expense of further solicitation. Submitting your proxy now will not prevent you from voting your shares at the Special Meeting if you desire to do so, as your proxy is revocable at your option.

By Order of the Board of Directors

/s/ Eric Schlorff

Eric Schlorff  
Chief Executive Officer

Denver, CO  
February 28, 2025

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**SeaStar Medical Holding Corporation**  
**3513 Brighton Blvd, Suite 410**  
**Denver, CO 80216**

**PROXY STATEMENT**

This proxy statement (the “Proxy Statement”) is furnished in connection with the solicitation by the Board of Directors (the “Board”) of SeaStar Medical Holding Corporation of proxies to be voted at our Special Meeting of Stockholders to be held on Thursday, March 20, 2025, at 10 am MDT, and at any continuation, postponement, or adjournment of the Special Meeting. The Special Meeting will be held virtually via live webcast. You will be able to attend the Special Meeting online by visiting [www.proxydocs.com/ICU](http://www.proxydocs.com/ICU). You will be able to vote your shares electronically and submit your written questions prior to and during the meeting through the online website.

Holders of record of our common stock, par value \$0.0001 per share (the “Common Stock”), as of the close of business on January 31, 2025 (the “Record Date”), will be entitled to notice of and to vote at the Special Meeting and at any continuation, postponement, or adjournment of the Special Meeting. As of the Record Date, there were 6,570,789 shares of Common Stock outstanding and entitled to vote at the Special Meeting. Each share of Common Stock is entitled to one vote on any matter presented to stockholders at the Special Meeting.

The Company completed a 25-for-1 reverse stock split on June 7, 2024. All information in this Proxy Statement relating to number of shares of Common Stock and exercise prices of warrants are presented on a post-split basis.

The Company will begin mailing, or otherwise make available to stockholders, the Notice of Internet Availability of Proxy Materials containing instructions on how to access the proxy materials and how to vote to stockholders on or about February 28, 2025. In this Proxy Statement, “Company”, “we”, “us”, and “our” refer to SeaStar Medical Holding Corporation.

**Proposals**

At the Special Meeting, you will be asked:

- To approve, for purposes of complying with Nasdaq Listing Rule 5635(d), the issuance of Common Warrants and Common Warrant Shares upon the exercise thereof;
- To approve, for purposes of complying with Nasdaq Listing Rule 5635(d), the extension of the Term of the Company’s Series B Warrants; and
- To approve a proposal to adjourn or postpone the Special Meeting to a later date or dates, if necessary, to permit further solicitation and vote of proxies if there are insufficient votes for, or otherwise in connection with, the approval of the Common Warrants Proposal and Warrant Amendment Proposal.

We know of no other business that will be presented at the Special Meeting. If any other matter properly comes before the stockholders for a vote at the Special Meeting, however, the proxy holders named on the Company’s proxy card will vote your shares in accordance with their best judgment.

**Recommendations of the Board**

The Board recommends that you vote your shares as indicated below. If you return a properly completed proxy card, or vote your shares by telephone or Internet, your shares of Common Stock will be voted on your behalf as you direct. If not otherwise specified, the shares of Common Stock represented by the proxies will be voted, and the Board recommends that you vote:

- **FOR** the Common Warrants Proposal;
- **FOR** the Warrant Amendment Proposal; and
- **FOR** the Adjournment Proposal

If any other matter properly comes before the stockholders for a vote at the Special Meeting, the proxy holders named on the Company’s proxy card will vote your shares in accordance with their best judgment.

## **Information About This Proxy Statement**

**Why you received this Proxy Statement.** You are viewing or have received these proxy materials because our Board of Directors is soliciting your proxy to vote your shares at the Special Meeting. This Proxy Statement includes information that we are required to provide to you under the rules of the Securities and Exchange Commission (“SEC”) and that is designed to assist you in voting your shares.

**Printed Copies of Our Proxy Materials.** You have received or will receive printed copies of our proxy materials, and instructions regarding how you can vote are contained on the proxy card included in the materials.

**Householding.** The SEC’s rules permit us to deliver a single set of proxy materials to one address shared by two or more of our stockholders. This delivery method is referred to as “householding” and can result in significant cost savings. To take advantage of this opportunity, we have delivered only one set of proxy materials to multiple stockholders who share an address, unless we received contrary instructions from the impacted stockholders prior to the mailing date. We agree to deliver promptly, upon written or oral request, a separate copy of the proxy materials, as requested, to any stockholder at the shared address to which a single copy of those documents was delivered. If you prefer to receive separate copies of the proxy materials, contact Continental Stock Transfer and Trust Company (the “Transfer Agent”) at 1-800-509-8856 or in writing at Continental Stock Transfer and Trust, 1 State Street 30<sup>th</sup> Floor, New York, NY 10004-1561.

If you are currently a stockholder sharing an address with another stockholder and wish to receive only one copy of future proxy materials for your household, please contact the Transfer Agent at 1-800-509-8856 or in writing at Continental Stock Transfer and Trust, 1 State Street 30<sup>th</sup> Floor, New York, NY 10004-1561.

## QUESTIONS AND ANSWERS ABOUT THE 2025 SPECIAL MEETING OF STOCKHOLDERS

### Who is entitled to vote at the Special Meeting?

The Record Date for the Special Meeting is January 31, 2025, which was approved by our Board of Directors. You are entitled to vote at the Special Meeting only if you were a stockholder of record at the close of business on that date, or if you hold a valid proxy for the Special Meeting. Each outstanding share of Common Stock is entitled to one vote for each matter before the Special Meeting. At the close of business on the Record Date, there were 6,470,879 shares of Common Stock outstanding and entitled to vote at the Special Meeting.

### How many shares must be present to hold the Special Meeting?

A quorum must be present at the Special Meeting for any business to be conducted. The presence at the Special Meeting online or by proxy of the holders of at least 33 ⅓% of the Common Stock of the Company issued and outstanding and entitled to vote on the Record Date, or 2,156,960 shares, will constitute a quorum.

### Who can attend the Special Meeting?

The Company has decided to hold the Special Meeting online. You may attend and participate in the Special Meeting online by visiting the following website: [www.proxydocs.com/ICU](http://www.proxydocs.com/ICU). You will be able to vote your shares electronically and submit your written questions prior to and during the meeting through the online website.

If you decide to join the Special Meeting online, we encourage you to access the meeting prior to the start time. Online check-in will begin at 9:50 am MDT, and you should allow ample time for the check-in procedures.

### What if a quorum is not present at the Special Meeting?

If a quorum is not present at the scheduled time of the Special Meeting, the Chairperson of the Special Meeting is authorized by our Amended and Restated Bylaws (the “Bylaws”) to adjourn the meeting, without the vote of stockholders.

### What does it mean if I receive more than one set of proxy materials?

It means that your shares are held in more than one account at the transfer agent and/or with banks or brokers. Please vote all of your shares. To ensure that all of your shares are voted, for each set of proxy materials, please submit your proxy by phone, via the Internet, or, if you received printed copies of the proxy materials, by signing, dating and returning the enclosed proxy card in the enclosed envelope.

### How do I vote?

*Stockholders of Record.* If you are a stockholder of record, you may vote:

- by Internet — You can vote over the Internet at [www.proxypush.com/icu](http://www.proxypush.com/icu) by following the instructions on the proxy card;
- by Telephone — You can vote by telephone by calling 1-866-868-2739 and following the instructions on the proxy card;
- by Mail — You can vote by mail by signing, dating and mailing the proxy card, which you may have received by mail; or
- at the Meeting — You can use the instructions that accompanied your proxy materials to vote electronically during the meeting.

Internet and telephone voting facilities for stockholders of record will be available 24 hours a day and will close at 11:59 pm MDT on March 19, 2025. To participate in the Special Meeting online, including to vote via the Internet or telephone, you will need the 12-digit control number included on your proxy card or on the instructions that accompanied your proxy materials.

Whether or not you expect to attend the Special Meeting, we urge you to vote your shares as promptly as possible to ensure your representation and the presence of a quorum at the Special Meeting. If you submit your proxy ahead of time, you may still decide to attend the Special Meeting and vote your shares at the meeting.

*Beneficial Owners of Shares Held in “Street Name.”* If your shares are held in “street name” through a bank or broker, you will receive instructions on how to vote from the bank or broker. You must follow their instructions in order for your shares to be voted. Internet and telephone voting also may be offered to stockholders owning shares through certain banks and brokers.

### **Can I change my vote after I submit my proxy?**

Yes. If you are a registered stockholder, you may revoke your proxy and change your vote:

- by submitting a duly executed proxy bearing a later date;
- by granting a subsequent proxy through the Internet or telephone;
- by giving written notice of revocation to the Secretary of the Company prior to or at the Special Meeting; or
- by voting online at the Special Meeting.

Your most recent proxy card or Internet or telephone proxy is the one that is counted. Your attendance at the Special Meeting by itself will not revoke your proxy unless you give written notice of revocation to the Secretary before your proxy is voted or you vote online at the Special Meeting.

If your shares are held in street name, you may change or revoke your voting instructions by following the specific directions provided to you by your bank or broker, or you may vote online at the Special Meeting or otherwise vote through your bank or broker.

### **What if I do not specify how my shares are to be voted?**

If you submit a proxy but do not indicate any voting instructions, the persons named as proxies will vote in accordance with the recommendations of the Board of Directors. The Board of Directors’ recommendations are indicated on page 1 of this Proxy Statement, as well as with the description of each proposal in this Proxy Statement.

### **Will any other business be conducted at the Special Meeting?**

We know of no other business that will be presented at the Special Meeting. If any other matter properly comes before the stockholders for a vote at the Special Meeting, however, the proxy holders named on the Company’s proxy card will vote your shares in accordance with their best judgment.

### **Will there be a question-and-answer session during the Special Meeting?**

As part of the Special Meeting, we will hold a live Q&A session, during which we intend to answer questions submitted during or prior to the meeting that are pertinent to the Company and the meeting matters, as time permits. Only stockholders that have accessed the Special Meeting as a stockholder by following the procedures outlined above in “Who can attend the Special Meeting?” will be permitted to submit questions during the Special Meeting through the Special Meeting webpage. We have the discretion to decline responses to any questions submitted by stockholders.

Additional information regarding the Q&A session will be available in the “Rules of Conduct” available on the Special Meeting webpage for stockholders that have accessed the Special Meeting as a stockholder by following the procedures outlined above in “Who can attend the Special Meeting?”.

**How many votes are required for the approval of the proposals to be voted upon and how will abstentions and broker non-votes be treated?**

<b>Proposal</b>	<b>Votes Required</b>	<b>Effect of Votes Withheld/Abstentions and Broker Non-Votes</b>
<b>Proposal 1:</b> Common Warrants Proposal	The affirmative vote of the majority of the votes cast	Abstentions and broker non-votes will have no effect on the outcome of this proposal.
<b>Proposal 2:</b> Warrant Amendment Proposal	The affirmative vote of the majority of the votes cast	Abstentions and broker non-votes will have no effect on the outcome of this proposal.
<b>Proposal 3:</b> Adjournment Proposal	The affirmative vote of the majority of the votes cast	Abstentions and broker non-votes will have no effect on the outcome of this proposal.

**What is a “vote withheld” and an “abstention” and how will votes withheld and abstentions be treated?**

Votes withheld and abstentions are counted as present and entitled to vote for purposes of determining a quorum. Votes withheld and abstentions have no effect on the outcome of the Common Warrants Proposal, Warrant Amendment Proposal or the Adjournment Proposal.

**What is the difference between being a “record holder” and holding shares in “street name”?**

A record holder holds shares in his or her name. Shares held in “street name” means shares that are held in the name of a bank or broker on a person’s behalf.

**Am I entitled to vote if my shares are held in “street name”?**

Yes. If your shares are held by a bank or a brokerage firm, you are considered the “beneficial owner” of those shares held in “street name.” If your shares are held in street name, these proxy materials are being provided to you by your bank or brokerage firm, along with a voting instruction card if you received printed copies of our proxy materials. As the beneficial owner, you have the right to direct your bank or brokerage firm how to vote your shares, and the bank or brokerage firm is required to vote your shares in accordance with your instructions.

**What are broker non-votes and do they count for determining a quorum?**

Generally, broker non-votes occur when shares held by a broker in “street name” for a beneficial owner are not voted with respect to a particular proposal because the broker (1) has not received voting instructions from the beneficial owner and (2) lacks discretionary voting power to vote those shares. A broker is entitled to vote shares held for a beneficial owner on routine matters without instructions from the beneficial owner of those shares. On the other hand, absent instructions from the beneficial owner of such shares, a broker is not entitled to vote shares held for a beneficial owner on non-routine matters, such as the approval of issuance of shares of Common Stock. Broker non-votes count for purposes of determining whether a quorum is present.

**Where can I find a list of stockholders?**

A complete list of such stockholders will be open to the examination of any stockholder for a period of ten days prior to the Special Meeting for a purpose germane to the meeting by sending an email to Investor Relations at [jcain@lhai.com](mailto:jcain@lhai.com), stating the purpose of the request and providing proof of ownership of Common Stock. The list of these stockholders will also be available during the Special Meeting or on the instructions that accompanied your proxy materials.

**Where can I find the voting results of the Special Meeting?**

We plan to announce preliminary voting results at the Special Meeting, and we will report the final results in a Current Report on Form 8-K, which we intend to file with the SEC after the Special Meeting.

**Who will be soliciting votes from stockholders?**

Our Board is soliciting proxies for use at the Special Meeting. All costs associated with this solicitation will be borne directly by the Company. We will reimburse banks, brokers and other custodians, nominees and fiduciaries representing beneficial owners of Common Stock for their expenses in forwarding soliciting materials to beneficial owners of Common Stock and in obtaining voting instructions from those owners. Our directors and officers may also solicit proxies by telephone, by facsimile, by mail, on the internet or in person. They will not be paid any additional amounts for soliciting proxies.

## SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The following table sets forth information regarding the beneficial ownership of Common Stock on February 11, 2025 by:

- each person known by the Company to be the beneficial owner of more than 5% of outstanding Common Stock;
- each of the Company’s current named executive officers and directors; and
- all current executive officers and directors of the Company as a group.

Beneficial ownership is determined according to the rules of the SEC, which generally provide that a person has beneficial ownership of a security if he, she or it possesses sole or shared voting or investment power over that security or the right to acquire such power within 60 days. Except as indicated by the footnotes below, the Company believes, based on the information furnished to it, that the persons and entities named in the table below will have sole voting and investment power with respect to all stock that they beneficially own, subject to applicable community property laws.

Common Stock issuable upon exercise of warrants, options or restricted stock units currently exercisable within 60 days are deemed outstanding solely for purposes of calculating the percentage of total voting power of the beneficial owner thereof.

Subject to the paragraph above, the percentage ownership of Common Stock is based on 8,718,291 shares of Common Stock outstanding as of February 11, 2025.

Name and Address of Beneficial Owner	Number of Shares Beneficially Owned	%
<b><i>Five Percent Holders</i></b>		
Armistice Capital Master Fund Ltd. <sup>(1)</sup> . . . . .	2,216,868	22.89
<b><i>Directors and Executive Officers</i></b> <sup>(2)</sup>		
Eric Schlorff <sup>(3)</sup> . . . . .	58,106	*
David Green <sup>(4)</sup> . . . . .	15,948	*
Kevin Chung <sup>(5)</sup> . . . . .	10,145	*
Rick Barnett <sup>(6)</sup> . . . . .	4,947	*
Kenneth Van Heel <sup>(7)</sup> . . . . .	3,704	*
Allan Collins, MD <sup>(8)</sup> . . . . .	1,459	*
Jennifer Baird . . . . .	—	*
Bernadette N. Vincent. . . . .	—	*
John Neuman . . . . .	—	*
All directors and executive officers as a group (9 persons) <sup>(9)</sup> . . . . .	94,309	1.08%

\* Less than 1%.

- (1) Consists of 1,282,000 shares of common stock issuable upon the exercise of pre-funded warrants and 934,868 shares of common stock issuable upon the exercise of common warrants. The securities in the form of warrants to purchase shares of Common Stock are directly held by Armistice Capital Master Fund Ltd., a Cayman Islands exempted company (the “Master Fund”), and may be deemed to be beneficially owned by: (i) Armistice Capital, LLC (“Armistice Capital”), as the investment manager of the Master Fund; and (ii) Steven Boyd, as the Managing Member of Armistice Capital. The pre-funded warrants are subject to a beneficial ownership limitation of 9.99% while the common warrants are subject to a beneficial ownership limitation of 4.99%, which such limitation restricts the Master Fund from exercising that portion of the warrants that would result in the Master Fund and its affiliates owning, after exercise, a number of shares of Common Stock in excess of the beneficial ownership limitations. The address of Armistice Capital Master Fund Ltd. is c/o Armistice Capital, LLC, 510 Madison Avenue, 7<sup>th</sup> Floor, New York, NY 10022.
- (2) Unless otherwise noted, the business address of each of the following entities or individuals is c/o SeaStar Medical Holding Corporation, 3513 Brighton Blvd Ste 410, Denver, CO 80216.
- (3) Includes 8,069 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025, and 330 shares of Common Stock issuable upon the vesting of restricted stock units within 60 days of February 11, 2025.

- (4) Includes 750 shares of Common Stock issuable upon the vesting of restricted stock units within 60 days of February 11, 2025.
- (5) Includes 2,660 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025.
- (6) Includes 1,479 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025.
- (7) Includes 1,304 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025.
- (8) Includes 1,459 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025.
- (9) Includes 14,971 shares of Common Stock issuable upon exercise of stock options within 60 days of February 11, 2025 and 1,080 shares of Common Stock issuable upon the vesting of restricted stock units within 60 days of February 11, 2025.

## **PROPOSAL 1: APPROVAL OF THE ISSUANCE OF COMMON WARRANTS AND COMMON WARRANT SHARES UPON THE EXERCISE THEREOF**

### **Background and Overview**

On January 31, 2025, the Company entered into the Securities Purchase Agreement (the “Purchase Agreement”) with an institutional investor (the “Purchaser”), pursuant to which the Company agreed to issue to the Purchaser, (i) in a registered direct offering, 713,000 shares of the Company’s common stock (the “Shares”), par value \$0.0001 per share, and pre-funded warrants to purchase 2,816,412 shares of Common Stock (the “Pre-Funded Warrants”) with an exercise price of \$0.001 per share, and (ii) in a concurrent private placement, warrants to purchase 3,529,412 shares of Common Stock (the “Common Warrants”) with an exercise price of \$1.70. Such registered direct offering and concurrent private placement are referred to herein as the “Transactions”. The offering was made without an underwriter or a placement agent and we did not pay underwriting discounts or commissions. We were required to pay to H.C. Wainwright & Co. (“Wainwright”) a cash fee equal to 7.0% of the aggregate gross proceeds in this offering and to issue Wainwright warrants to purchase 247,059 shares of Common Stock at an exercise price of \$2.125 per share (the “Placement Agent Warrants”).

The Company received aggregate gross proceeds from the Transactions of approximately \$6.0 million, before deducting offering expenses payable by the Company. The Shares, the Pre-Funded Warrants, the shares of Common Stock issuable upon exercise of the Pre-Funded Warrants (the “Pre-Funded Warrant Shares”), the Placement Agent Warrants and the shares of Common Stock issuable upon exercise of the Placement Agent Warrants (the “Placement Agent Warrant Shares”), were offered by the Company pursuant to a shelf registration statement on Form S-3 (File No. 333-275968), which was declared effective on December 22, 2023 (the “Registration Statement”). The Common Warrants were issued in a concurrent private placement. The issuance of the Common Warrants and the shares of Common Stock issuable upon exercise of the Common Warrants (the “Common Warrant Shares”) have not been registered under the Securities Act of 1933, as amended (the “Securities Act”), and were offered pursuant to the exemption provided in Section 4(a)(2) under the Securities Act and Rule 506(b) promulgated thereunder. The Common Warrants will be exercisable commencing on the Stockholder Approval Date (defined below) and will expire on the fifth anniversary of the Stockholder Approval Date. The Pre-Funded Warrants will not expire and will be exercisable commencing on the date of issuance and at any time until all of the Pre-Funded Warrants are exercised in full. The Placement Agent Warrants have an exercise price of \$2.125 per share (representing 125% of the offering price per Share and accompanying Common Warrant) and a termination date of February 3, 2030.

The Company agreed to hold a special meeting of stockholders within 120 days of the closing of the offering for the purpose of obtaining approval with respect to (i) the issuance of all of the Common Warrants and the Common Warrant Shares upon the exercise thereof and (ii) the extension of the term of the Series B Warrants (defined below) issued in January 2024 to January 30, 2029 (the date such approval obtained, the “Stockholder Approval Date”).

### **Why We are Seeking Approval of this Proposal**

Pursuant to Nasdaq Listing Rule 5635(d), stockholder approval is required prior to the issuance of securities in a transaction, other than a public offering, involving the sale, issuance or potential issuance by the Company of common stock (or securities convertible into or exercisable for common stock), which equals 20% or more of the common stock or 20% or more of the voting power outstanding before the issuance, at a price less than the lower of: (i) the closing price immediately preceding the signing of the binding agreement, or (ii) the average closing price of the common stock for the five trading days immediately preceding the signing of the binding agreement for the transaction (the “Minimum Price”).

In light of this rule, the Purchase Agreement requires the Company to hold an annual or special meeting of stockholders within 120 days of closing for the purpose of obtaining approval with respect to the issuance of all of the Common Warrants and the Common Warrant Shares upon the exercise thereof.

### **Potential Effects of Approval of this Proposal**

If approved, this Proposal No. 1 could result in the issuance of shares of Common Stock upon the exercise of the Common Warrants subject to their respective beneficial ownership limitations.

A concentration of ownership could adversely affect the prevailing market price and liquidity for the shares of Common Stock. Holders of our Common Stock or securities convertible into Common Stock could own or come to own a smaller percentage of our outstanding shares of Common Stock and, accordingly, a smaller percentage interest in the voting power, liquidation value and book value of the shares of Common Stock.

In addition, upon issuance of shares of Common Stock upon the exercise of the Common Warrants there would be a greater number of shares of our Common Stock eligible for sale in the public markets. Any such sales, or the anticipation of the possibility of such sales, represents an overhang on the market and could depress the market price of our Common Stock. Finally, the reservation of the shares underlying the Common Warrants precludes the Company from issuing such shares for other purposes including equity financings and we may be unable to raise additional capital as a result.

### **Potential Effects of Non-Approval of this Proposal**

The Company is not seeking the approval of stockholders to authorize its entry into the Transactions, as the Company has already done so and the relevant documents are already binding obligations of the Company. The failure of stockholders to approve this proposal will not negate the existing terms of the transactions or the relevant documents, which will remain binding on the Company.

If this proposal is not approved by the stockholders, the Common Warrants would not be exercisable and may result in cash obligations of the Company. The Company's satisfaction of any such potential cash obligations could materially impair the Company's working capital. Failure to obtain Stockholder Approval may also materially adversely affect the Company's future ability to raise equity or debt capital from third parties on attractive terms, if at all, and also risks significantly impairing the operations, assets and ongoing viability of the Company.

Additionally, if approval is not obtained at the first meeting, the Company is obligated to call a special meeting of its stockholders every 90 days thereafter until such approval is effective or the Common Warrants are no longer outstanding.

### **Required Vote of Stockholders**

The approval of this proposal requires the affirmative vote of holders of a majority of the votes cast at the Special Meeting. This means that the approval requires the number of votes cast in favor exceeds the number of votes cast against approval of this proposal. Abstentions are not considered votes cast and will therefore have no effect on this proposal. Under applicable New York Stock Exchange rules, brokers are not permitted to vote shares held for a beneficial owner on "non-routine" matters (such as this proposal) without specific instructions from the beneficial owner. Therefore, broker non-votes are not considered votes cast and will also have no effect on the outcome of this proposal.

### **Recommendation of the Board of Directors**

The Board of Directors unanimously recommends that stockholders vote **FOR** the approval, for purposes of complying with Nasdaq Listing Rule 5635(d) and the requirements of the Purchase Agreement, of the Common Warrants Proposal.

## **PROPOSAL 2: APPROVAL OF THE EXTENSION OF THE TERM OF THE SERIES B WARRANTS**

### **Background and Overview**

On January 31, 2025, in consideration for entering into the Transactions, the Company agreed to voluntarily adjust the exercise price of the Company's Series A Common Stock Purchase Warrants (the "Series A Warrants") and Series B Common Stock Purchase Warrants (the "Series B Warrants"), issued by the Company to the Purchaser on January 30, 2024, to \$1.70 per share of Common Stock.

The Company and the Purchaser also agreed to enter into an amendment to the Series B Warrants (the "Amendment") to extend the term of the Series B Warrants to January 30, 2029, subject to stockholder approval of the Amendment.

The Company agreed to hold a special meeting of stockholders within 120 days of the closing of the offering for the purpose of obtaining approval with respect to the issuance of all of the Common Warrants and the Common Warrant Shares upon the exercise thereof and (ii) the extension of the term of the Series B Warrants issued in January 2024 to January 30, 2029.

### **Why We are Seeking Approval of this Proposal**

Pursuant to Nasdaq Listing Rule 5635(d), stockholder approval is required prior to the issuance of securities in a transaction, other than a public offering, involving the sale, issuance or potential issuance by the Company of common stock (or securities convertible into or exercisable for common stock), which equals 20% or more of the common stock or 20% or more of the voting power outstanding before the issuance, at a price less than the lower of: (i) the closing price immediately preceding the signing of the binding agreement, or (ii) the average closing price of the common stock for the five trading days immediately preceding the signing of the binding agreement for the transaction.

In light of this rule, the Purchase Agreement requires the Company to hold an annual or special meeting of stockholders within 120 days of closing for the purpose of obtaining approval with respect to the extension of the term of the Series B Warrants issued in January 2024 to January 30, 2029 (which, following the adjustment of their exercise price, could be deemed an issuance below the Minimum Price).

### **Potential Effects of Approval of this Proposal**

If approved, this Proposal No. 2 could result in the issuance of shares of Common Stock upon the exercise of the Series B Warrants subject to their respective beneficial ownership limitations during a period not initially contemplated upon initial issue.

A concentration of ownership could adversely affect the prevailing market price and liquidity for the shares of Common Stock. Holders of our Common Stock or securities convertible into Common Stock could own or come to own a smaller percentage of our outstanding shares of Common Stock and, accordingly, a smaller percentage interest in the voting power, liquidation value and book value of the shares of Common Stock.

In addition, upon issuance of shares of Common Stock upon the exercise of the Series B Warrants there would be a greater number of shares of our Common Stock eligible for sale in the public markets. Any such sales, or the anticipation of the possibility of such sales, represents an overhang on the market and could depress the market price of our Common Stock. Finally, the reservation of the shares underlying the Series B Warrants precludes the Company from issuing such shares for other purposes including equity financings and we may be unable to raise additional capital as a result.

### **Potential Effects of Non-Approval of this Proposal**

The Company is not seeking the approval of stockholders to authorize its entry into the Transactions, as the Company has already done so and the relevant documents are already binding obligations of the Company. The failure of stockholders to approve this proposal will not negate the existing terms of the transactions or the relevant documents, which will remain binding on the Company.

Failure to obtain Stockholder Approval may materially adversely affect the Company's future ability to raise equity or debt capital from third parties on attractive terms, if at all, and also risks significantly impairing the operations, assets and ongoing viability of the Company.

Additionally, if approval is not obtained at the first meeting, the Company is obligated to call a special meeting of its stockholders every 90 days thereafter until such approval is effective or the Common Warrants are no longer outstanding.

#### **Required Vote of Stockholders**

The approval of this proposal requires the affirmative vote of holders of a majority of the votes cast at the Special Meeting. This means that the approval requires the number of votes cast in favor exceeds the number of votes cast against approval of this proposal. Abstentions are not considered votes cast and will therefore have no effect on this proposal. Under applicable New York Stock Exchange rules, brokers are not permitted to vote shares held for a beneficial owner on "non-routine" matters (such as this proposal) without specific instructions from the beneficial owner. Therefore, broker non-votes are not considered votes cast and will also have no effect on the outcome of this proposal.

#### **Recommendation of the Board of Directors**

The Board of Directors unanimously recommends that stockholders vote **FOR** the approval, for purposes of complying with Nasdaq Listing Rule 5635(d) and the requirements of the Purchase Agreement, of the Warrant Amendment Proposal.

### **PROPOSAL 3: ADJOURNMENT OF SPECIAL MEETING**

#### **General**

The Adjournment Proposal, if adopted, will allow the Board of Directors to adjourn the Special Meeting to a later date or dates to permit further solicitation of proxies. The Adjournment Proposal will only be presented to you in the event that there are insufficient votes for, or otherwise in connection with, the approval of the Common Warrants Proposal or Warrant Amendment Proposal.

#### **Consequences if the Adjournment Proposal is Not Approved**

If the Adjournment Proposal is not approved by you, the Board of Directors may not be able to adjourn the Special Meeting to a later date or dates in the event that there are insufficient votes for, or otherwise in connection with, the approval of the Common Warrants Proposal or Warrant Amendment Proposal.

#### **Required Vote of Stockholders**

This proposal requires that the number of votes cast in favor exceeds the number of votes cast against approval of this proposal. Abstentions are not considered votes cast and will therefore have no effect on this proposal. Under applicable New York Stock Exchange rules, brokers are not permitted to vote shares held for a beneficial owner on “non-routine” matters (such as this proposal) without specific instructions from the beneficial owner. Therefore, broker non-votes are not considered votes cast and will also have no effect on the outcome of this proposal.

#### **Recommendation of the Board of Directors**

**THE BOARD OF DIRECTORS UNANIMOUSLY RECOMMENDS THAT STOCKHOLDERS VOTE FOR THE APPROVAL OF THE ADJOURNMENT PROPOSAL.**

## **STOCKHOLDERS' PROPOSALS**

Stockholders who intended to have a proposal considered for inclusion in our proxy materials for presentation at our 2025 annual meeting of stockholders pursuant to Rule 14a-8 under the Exchange Act had to submit the proposal to our Secretary at our offices at 3513 Brighton Blvd, Suite 410, Denver, CO 80216, Attn: Corporate Secretary in writing not later than January 6, 2025.

Stockholders intending to present a proposal at the 2025 annual meeting of stockholders, but not to include the proposal in our proxy statement, or to nominate a person for election as a director, must comply with the requirements set forth in our Bylaws. Our Bylaws require, among other things, that our Corporate Secretary receive written notice from the stockholder of record of their intent to present such proposal or nomination not earlier than the 120<sup>th</sup> day and not later than the 90<sup>th</sup> day prior to the anniversary of the preceding year's annual meeting.

In addition, to comply with the universal proxy rules, shareholders who intend to solicit proxies in support of Director nominees, other than the Company's nominees, must provide notice that sets forth the information required by Rule 14a-19 under the Securities Exchange Act of 1934, to our principal office, 3513 Brighton Blvd, Suite 410, Denver, CO 80216, Attn: Corporate Secretary, no later than March 6, 2025 and no earlier than February 4, 2025.

We reserve the right to reject, rule out of order, or take other appropriate action with respect to any proposal that does not comply with these or other applicable requirements.

## **OTHER MATTERS**

Our Board of Directors is not aware of any matter to be presented for action at the Special Meeting other than the matters referred to above and does not intend to bring any other matters before the Special Meeting. However, if other matters should come before the Special Meeting, it is intended that holders of the proxies named on the Company's proxy card will vote thereon in their discretion.

## **SOLICITATION OF PROXIES**

The accompanying proxy is solicited by and on behalf of our Board of Directors, whose Notice of Special Meeting of Stockholders is attached to this Proxy Statement, and the entire cost of our solicitation will be borne by us. In addition to the use of mail, proxies may be solicited by personal interview, telephone, e-mail and facsimile by our directors, officers and other employees who will not be specially compensated for these services. We will also request that brokers, nominees, custodians and other fiduciaries forward soliciting materials to the beneficial owners of shares held by the brokers, nominees, custodians and other fiduciaries. We will reimburse these persons for their reasonable expenses in connection with these activities.

## WHERE YOU CAN FIND ADDITIONAL INFORMATION

We make available free of charge through our website, [seastarmedical.com](http://seastarmedical.com), our annual reports on Form 10-K and other reports that we file with the SEC as well as certain of our corporate governance policies, including the charters for the audit, compensation and nominating and corporate governance committees of the Board and our code of business conduct and ethics and related party transaction approval policy. We will also provide to any person without charge, upon request, a copy of any of the foregoing materials. Any such request must be made in writing to us at: SeaStar Medical Holding Corporation, 3513 Brighton Blvd Suite 410, Denver, CO 80216. The SEC's website, [www.sec.gov](http://www.sec.gov), contains reports, proxy statements, and other information that we file electronically with the SEC. The content on any website referred to in this proxy statement is not incorporated by reference in this proxy statement unless expressly noted.

**WHETHER OR NOT YOU PLAN TO ATTEND THE SPECIAL MEETING ONLINE, WE URGE YOU TO VOTE YOUR SHARES VIA THE TOLL-FREE TELEPHONE NUMBER OR OVER THE INTERNET, AS DESCRIBED IN THIS PROXY STATEMENT. YOU MAY ALSO SIGN, DATE AND MAIL THE PROXY CARD IN THE ENCLOSED RETURN ENVELOPE. PROMPTLY VOTING YOUR SHARES WILL ENSURE THE PRESENCE OF A QUORUM AT THE SPECIAL MEETING AND WILL SAVE US THE EXPENSE OF FURTHER SOLICITATION.**

By Order of the Board of Directors

/s/ Eric Schlorff

Eric Schlorff

Chief Executive Officer

Denver, CO

February 28, 2025

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