

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

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

Prime Medicine, Inc.
(Exact name of registrant as specified in its charter)

Delaware
(State or other jurisdiction of incorporation or organization)

84-3097762
(I.R.S. Employer Identification No.)

**60 First Street
Cambridge, MA 02141
(617) 465-0013**

(Address, including zip code, and telephone number, including area code, of registrant's principal executive offices)

**Keith Gottesdiener, M.D.
President and Chief Executive Officer
Prime Medicine, Inc.
60 First Street
Cambridge, MA 02141
(617) 465-0013**

(Name, address, including zip code, and telephone number, including area code, of agent for service)

Copy to:
**Kingsley L. Taft
Marishka DeToy
Goodwin Procter LLP
100 Northern Avenue
Boston, MA 02210
(617) 570-1000**

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

If the only securities being registered on this Form are being offered pursuant to dividend or interest reinvestment plans, please check the following box.

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, other than securities offered only in connection with dividend or interest reinvestment plans, 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 registration statement pursuant to General Instruction I.D or a post-effective amendment thereto that shall become effective upon filing with the Commission pursuant to Rule 462(e) under the Securities Act, check the following box.

If this Form is a post-effective amendment to a registration statement filed pursuant to General Instruction I.D. filed to register additional securities or additional classes of securities pursuant to Rule 413(b) under the Securities Act, check the following box.

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, a smaller reporting company, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," "smaller reporting company" and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	<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, as amended, or until the Registration Statement shall become effective on such date as the Securities and Exchange Commission acting pursuant to said Section 8(a), may determine.

The information in this prospectus is not complete and may be changed. The selling stockholder named in this prospectus may not sell these securities until the registration statement filed with the Securities and Exchange Commission is effective. This prospectus is not an offer to sell these securities and it 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 13, 2024

PROSPECTUS



11,006,163 Shares of Common Stock Offered by the Selling Stockholder

This prospectus relates to the proposed resale or other disposition from time to time, in one or more offerings, by the selling stockholder identified in this prospectus of up to an aggregate of 11,006,163 shares of our common stock, par value \$0.00001 per share. The shares being offered were issued and sold to the selling stockholder in a private placement (the “private placement”) pursuant to a Securities Purchase Agreement, dated as of September 28, 2024, to which we and the selling stockholder are parties (the “Securities Purchase Agreement”). We are not selling any shares of our common stock under this prospectus and will not receive any of the proceeds from the sale or other disposition of the shares by the selling stockholder.

We are registering the resale of the shares of our common stock covered by this prospectus to satisfy certain of our obligations under the terms of the Securities Purchase Agreement.

We have agreed, pursuant to the terms of the Securities Purchase Agreement, to bear all of the expenses incurred in connection with the registration of these shares. The selling stockholder will pay or assume discounts, commissions, fees of underwriters, selling brokers or dealer managers and similar expenses, if any, incurred for the sale of these shares of our common stock.

The selling stockholder, including its pledgees, donees, transferees or other successors-in-interest, may sell the shares of common stock 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 one or more transactions otherwise than on these exchanges or systems, such as privately negotiated transactions, or using a combination of these methods, and 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. See section titled “Plan of Distribution” elsewhere in this prospectus for more information about how the selling stockholder may sell or otherwise dispose of its shares of common stock hereunder.

The selling stockholder may sell any, all or none of the securities offered by this prospectus and we do not know when or in what amount the selling stockholder may sell its shares of common stock hereunder following the effective date of the registration statement of which this prospectus forms a part.

Our common stock is listed on The Nasdaq Global Market under the symbol “PRME.” On December 9, 2024, the closing price for our common stock, as reported on The Nasdaq Global Market, was \$3.22 per share.

We are an “emerging growth company” and “smaller reporting company” under the federal securities laws and, as such, are subject to reduced public company reporting requirements. See “Our Company—Implications of Being an Emerging Growth Company and Smaller Reporting Company.”

Investing in our common stock involves a high degree of risk. See “[Risk Factors](#)” beginning on page 7 of this prospectus and under similar headings in the documents that are incorporated by reference into this prospectus for a discussion of the factors you should carefully consider before deciding to invest in our common stock.

Neither the Securities and Exchange Commission nor any state securities commission has approved or disapproved of these securities or passed upon the adequacy or accuracy of this prospectus. Any representation to the contrary is a criminal offense.

The date of this prospectus is _____, 2024.

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ABOUT THIS PROSPECTUS

This prospectus is part of a registration statement on Form S-3 that we filed with the U.S. Securities and Exchange Commission (the “SEC”) utilizing a “shelf” registration process. Under this shelf registration process, the selling stockholder may, from time to time, sell the shares of our common stock described in this prospectus in one or more offerings.

Neither we, nor the selling stockholder, have authorized anyone to give any information or to make any representation other than those contained or incorporated by reference in this prospectus. You must not rely upon any information or representation not contained in or incorporated by reference in this prospectus. The selling stockholder is offering to sell, and seeking offers to buy, shares of our common stock only in jurisdictions where it is lawful to do so. This prospectus does not constitute an offer to sell or the solicitation of an offer to buy any shares other than the registered shares to which it relates, nor does this prospectus constitute an offer to sell or the solicitation of an offer to buy shares in any jurisdiction to any person to whom it is unlawful to make such offer or solicitation in such jurisdiction. You should not assume that the information contained in this prospectus is accurate on any date subsequent to the date set forth on the front of the document or that any information we have incorporated by reference is correct on any date subsequent to the applicable dates of the documents incorporated by reference, even though this prospectus is delivered or shares are sold on a later date. Our business, financial condition, results of operations and prospects may have changed materially since those dates.

This prospectus, any applicable prospectus supplement and the information incorporated herein or therein by reference contains market data, industry statistics and other data that have been obtained or compiled from information made available by independent third parties. We are responsible for all of the disclosures contained in this prospectus, and we believe that these sources are reliable; however, we have not independently verified the information contained in such publications. In addition, such market data, industry statistics and other data may involve estimates, assumptions and other risks and uncertainties and are subject to change based on various factors, including those discussed under the section titled “Risk Factors” contained in this prospectus, and under similar headings in other documents that are incorporated by reference into this prospectus. Accordingly, investors should not place undue reliance on this information.

We further note that the representations, warranties and covenants made by us in any agreement that is filed as an exhibit to any document that is incorporated by reference herein were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties to such agreements, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were accurate only as of the date when made. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

A prospectus supplement may add to, update or change the information contained in this prospectus. You should read both this prospectus and any applicable prospectus supplement together with additional information described below under the sections titled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

As used in this prospectus, unless the context otherwise requires, references to the terms “Prime,” “Prime Medicine,” “the Company,” “we,” “us” and “our,” and similar designations refer to Prime Medicine, Inc. and, where appropriate, our wholly-owned subsidiary.

We intend to apply for various trademarks that we use in connection with the operation of our business. This prospectus may also contain trademarks, service marks and trade names of third parties, which are the property of their respective owners. Our use or display of third parties’ trademarks, service marks, trade names or products in this prospectus is not intended to, and does not imply a relationship with, or endorsement or sponsorship by us. Solely for convenience, the trademarks, service marks and trade names referred to in this prospectus may appear without the ®, SM and ™ symbols, but the omission of such references is not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or the right of the applicable owner of these trademarks, service marks and trade names.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This prospectus, including the documents that we incorporate by reference, includes 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 Securities Exchange Act of 1934, as amended (the “Exchange Act”). All statements, other than statements of historical fact, contained herein, including statements regarding our plans, objectives and expectations for our business, operations and financial performance and condition, and can be identified by terminology such as “anticipate,” “believe,” “contemplate,” “continue” “could,” “estimate,” “expect,” “goal,” “hope,” “intend,” “may,” “might,” “plan,” “possible,” “potential,” “predict,” “project,” “seek,” “should,” “strategy,” “target,” “will,” “would,” “can,” “future” or the negative of these words or other similar expressions. Forward-looking statements are based on management’s belief and assumptions and on information currently available to management. Although we believe that the expectations reflected in forward-looking statements are reasonable, such statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements to be materially different from any future results, performance or achievements expressed or implied by these forward-looking statements.

Forward-looking statements include, but are not limited to, statements about:

- the initiation, timing, progress and results of our research and development programs, product candidates, preclinical studies and future clinical trials;
- our ability to demonstrate, and the timing of, preclinical proof-of-concept *in vivo* for multiple programs;
- our ability to advance any current and future product candidates that we may identify and successfully complete any clinical studies, including the manufacture of any such product candidates;
- our ability to pursue our areas of focus and any other additional programs we may advance;
- our ability to quickly leverage programs within our initial target indications and to progress additional programs to further develop our pipeline;
- the timing of our investigational new drug application submissions;
- the ability of our Prime Editing technology to address unmet medical needs in patients;
- the implementation of our strategic plans for our business, programs and technology;
- the scope and duration of protection we are able to establish and maintain for intellectual property rights covering our Prime Editing technology;
- developments related to our competitors and our industry;
- our ability to leverage the clinical, regulatory, and manufacturing advancements made by gene therapy and gene editing programs to accelerate our clinical trials and approval of product candidates;
- the collaboration with Bristol-Myers Squibb Company and the intended and potential benefits thereof, including the receipt of potential milestone and royalty payments from commercial product sales, if any;
- our ability to identify and enter into future license agreements and collaborations;
- developments related to our Prime Editing technology;
- regulatory developments in the United States and foreign countries;
- our ability to attract and retain key scientific and management personnel;
- our estimates of our expenses, capital requirements, needs for additional financing;

- our expectations regarding the period during which we will remain an emerging growth company under the Jumpstart Our Business Startups Act of 2012 (the “JOBS Act”);
- the effect of unfavorable macroeconomic conditions or market volatility resulting from global economic conditions;
- our expectations regarding the anticipated timeline of our cash runway and future financial performance; and
- other risks and uncertainties, including those listed under the caption “Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q, and the section of any accompanying prospectus supplement entitled “Risk Factors,” as well as in other filings made with the SEC subsequent to the date hereof that are incorporated by reference herein.

The forward-looking statements in this prospectus represent our views as of the date of this prospectus. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should therefore not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this prospectus.

We may from time-to-time provide estimates, projections and other information concerning our industry, our business and the markets for our programs and product candidates. Information that is based on estimates, forecasts, projections, market research or similar methodologies is inherently subject to uncertainties and actual events or circumstances may differ materially from events and circumstances that are assumed in this information. Unless otherwise expressly stated, we obtained this industry, business, market, and other data from our own internal estimates and research as well as from reports, research surveys, studies, and similar data prepared by market research firms and other third parties, industry, medical and general publications, government data and similar sources. While we are not aware of any misstatements regarding any third-party information presented in this prospectus, their estimates, in particular, as they relate to projections, involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors. You should read this prospectus, any applicable prospectus supplement and any related free writing prospectus and the documents that we reference therein and have filed with the SEC as exhibits thereto completely and with the understanding that our actual future results may be materially different from any future results expressed or implied by these forward-looking statements. These estimates involve numerous assumptions, are subject to risks and uncertainties and are subject to change based on various factors, including those discussed under Part I, Item 1A “Risk Factors” and elsewhere in our most recent Annual Report on Form 10-K and our subsequent Quarterly Reports on Form 10-Q, if any, and the section of any accompanying prospectus supplement entitled “Risk Factors,” as well as in other filings made with the SEC subsequent to the date hereof that are incorporated by reference herein. If one or more of these risks or uncertainties occur, or if our underlying assumptions prove to be incorrect, actual events or results may vary significantly from those implied or projected by the forward-looking statements. No forward-looking statement is a guarantee of future performance.

OUR COMPANY

Overview

We are a biotechnology company committed to delivering a new class of differentiated one-time curative genetic therapies. We are deploying Prime Editing technology, which we believe is a versatile, precise, and efficient gene editing technology.

In September 2024, we announced that we are strategically focusing our pipeline on a set of high value programs, each targeting a disease with well-understood biology and a clearly defined clinical development and regulatory path, and each expected to provide the foundation for expansion into additional opportunities. This diversified portfolio of high value, investigational therapeutic programs is organized around our core areas of focus: hematology, immunology and oncology, liver, and lung. We are advancing additional programs as potential partnership opportunities.

Chronic granulomatous disease is our most advanced blood program, and we are advancing PM359 as our candidate in the treatment of this disease.

We believe our Prime Editing programs are well-positioned to leverage the clinical, regulatory, and manufacturing advancements made to date across gene therapy, gene editing, and delivery modalities to accelerate progression to clinical trials and potential approval.

Private Placement

On September 28, 2024, we entered into the Securities Purchase Agreement with the selling stockholder, pursuant to which we agreed to issue and sell to the selling stockholder an aggregate of 11,006,163 shares of our common stock for an aggregate purchase price of \$55.0 million pursuant to the terms and conditions thereof. The aggregate gross proceeds for the sale of the shares of common stock was \$55.0 million, and after deducting certain of our expenses, the net proceeds received by us in the private placement was approximately \$54.7 million.

Under the Securities Purchase Agreement, we agreed to register for resale 11,006,163 shares of our common stock no later than ninety (90) calendar days following the closing of the private placement. We agreed to use commercially reasonable efforts to have the registration statement declared effective as soon as practicable after the filing. This prospectus is part of that registration statement.

Additionally, under the Securities Purchase Agreement, we agreed to maintain the effectiveness of the registration statement until the earliest to occur of: (i) the third (3rd) anniversary of the filing of the registration statement, (ii) the date that all of the shares purchased by the selling stockholder covered by the registration statement have been sold pursuant to the registration statement, or (iii) such time as the shares become eligible for resale by non-affiliates of the selling stockholder without any volume limitations or other restrictions pursuant to Rule 144 under the Securities Act (including, for the avoidance of doubt, Rule 144(i)(2)) or any other rule of similar effect. We have agreed to be responsible for all fees and expenses incurred in connection with the registration of the shares.

The description of the Securities Purchase Agreement is not complete and is qualified in its entirety by reference to the Securities Purchase Agreement, which has been filed as an exhibit to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2024 filed with the SEC on November 12, 2024. See “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.” The representations, warranties and covenants made by us in such agreement were made solely for the benefit of the parties to such agreement, including, in some cases, for the purpose of allocating risk among the parties thereto, and should not be deemed to be a representation, warranty or covenant to you. Moreover, such representations, warranties or covenants were made as of an earlier date. Accordingly, such representations, warranties and covenants should not be relied on as accurately representing the current state of our affairs.

Corporate History

We were incorporated under the laws of the State of Delaware in September 2019 under the name Prime Medicine, Inc. Our principal executive offices are located at 60 First Street, Cambridge, MA 02141 and our telephone number at that address is (617) 465-0013. Our website address is www.primemedicine.com. The information contained in, or that can be accessed through, our website, does not constitute a part of this prospectus, and is not incorporated by reference in this prospectus or in any other filings we make with the SEC. We have included our website in this prospectus solely as an inactive textual reference. Our common stock trades on the Nasdaq Global Market under the symbol “PRME.”

Implications of Being an Emerging Growth Company and a Smaller Reporting Company

We qualify as an “emerging growth company” as defined in the JOBS Act. As an emerging growth company, we may take advantage of specified reduced disclosure and other requirements that are otherwise applicable generally to public companies. These provisions include:

- being permitted to only disclose two years of audited financial statements, in addition to any required unaudited interim financial statements, with correspondingly reduced “Management’s Discussion and Analysis of Financial Condition and Results of Operations” disclosure;
- reduced disclosure about our executive compensation arrangements;
- not being required to hold advisory votes on executive compensation or to obtain stockholder approval of any golden parachute arrangements not previously approved;
- an exemption from the auditor attestation requirement in the assessment of our internal control over financial reporting pursuant to the Sarbanes-Oxley Act of 2002; and
- an exemption from compliance with the requirements of the Public Company Accounting Oversight Board regarding the communication of critical audit matters in the auditor’s report on the financial statements.

We may take advantage of these exemptions for up to five years or such earlier time that we are no longer an emerging growth company. We would cease to be an emerging growth company on the date that is the earliest of (i) the last day of the fiscal year in which we have total annual gross revenues of \$1.235 billion or more; (ii) the last day of our fiscal year following the fifth anniversary of the date of the completion of our initial public offering; (iii) the date on which we have issued more than \$1.0 billion in nonconvertible debt during the previous three years; or (iv) the date on which we are deemed to be a large accelerated filer under the rules of the SEC. We may choose to take advantage of some but not all of these exemptions. We have taken advantage of reduced reporting requirements in this prospectus. Accordingly, the information contained herein may be different from the information you receive from other public companies in which you hold stock. Additionally, the JOBS Act provides that an emerging growth company can take advantage of an extended transition period for complying with new or revised accounting standards. This allows an emerging growth company to delay the adoption of certain accounting standards until those standards would otherwise apply to private companies. We have elected to avail ourselves of this exemption and, therefore, while we are an emerging growth company we will not be subject to new or revised accounting standards at the same time that they become applicable to other public companies that are not emerging growth companies. As a result of this election, our financial statements may not be comparable to those of other public companies that comply with new or revised accounting pronouncements as of public company effective dates. We may choose to early adopt any new or revised accounting standards whenever such early adoption is permitted for private companies.

We are also a “smaller reporting company,” meaning that the market value of our shares held by non-affiliates plus the aggregate amount of gross proceeds to us as a result of this offering is less than \$700.0 million and our annual revenue was less than \$100.0 million during the most recently completed fiscal year. We may continue to be a smaller reporting company after this offering if either (i) the market value of our shares held by non-affiliates is less than \$250.0 million or (ii) our annual revenue was less than \$100.0 million during the most recently completed fiscal year and the market value of our shares held by non-affiliates is less than \$700.0 million. If we are a smaller

reporting company at the time we cease to be an emerging growth company, we may continue to rely on exemptions from certain disclosure requirements that are available to smaller reporting companies. Specifically, as a smaller reporting company, we may choose to present only the two most recent fiscal years of audited financial statements in our Annual Report on Form 10-K and, similar to emerging growth companies, smaller reporting companies have reduced disclosure obligations regarding executive compensation.

RISK FACTORS

Investing in our common stock involves a high degree of risk. You should carefully consider the risks set forth in our filings with the SEC that are incorporated by reference herein and any prospectus supplement, as well as other information we include or incorporate by reference into this prospectus and any applicable prospectus supplement, before making an investment decision. Our business, financial condition or results of operations could be materially adversely affected by the materialization of any of these risks. The trading price of our securities could decline due to the materialization of any of these risks, and you may lose all or part of your investment. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business.

This prospectus and the documents incorporated herein by reference also contain forward-looking statements that involve risks and uncertainties. Actual results could differ materially from those anticipated in these forward-looking statements as a result of certain factors, including the risks described in the documents incorporated herein by reference, including our most recent Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K, as applicable, and the other documents we file with the SEC that are deemed incorporated by reference into this prospectus. See the sections titled “Where You Can Find More Information” and “Incorporation of Certain Information by Reference.”

USE OF PROCEEDS

The selling stockholder will receive all of the net proceeds from the sale of any shares of our common stock under this prospectus. We are not selling any shares of our common stock under this prospectus and we will not receive any proceeds from the sale of any shares of our common stock by the selling stockholder.

The selling stockholder will pay any underwriting discounts and commissions and expenses incurred by the selling stockholder for brokerage, accounting, tax or legal services or any other expenses incurred by the selling stockholder in disposing of the shares of common stock covered by this prospectus. We will bear all other costs, fees and expenses incurred in effecting the registration of the shares covered by this prospectus, including, without limitation, all registration, filing and printing fees, fees and expenses of our counsel and our independent registered public accounting firm, and costs associated with clearing the shares for sale under applicable state securities laws and listing fees, but excluding discounts, commissions, fees of underwriters, selling brokers, dealer managers or similar securities industry professionals with respect to the shares being sold.

SELLING STOCKHOLDER

This prospectus covers the resale or other disposition, from time to time, by the selling stockholder identified in the table below or its pledgees, donees, transferees or other successors-in-interest, of up to 11,006,163 shares of our common stock issued and sold to the selling stockholder in connection with the private placement. See the section titled “Our Company—Private Placement.”

The table below presents information regarding the selling stockholder, the shares of common stock beneficially owned by it as of December 5, 2024, the shares of common stock that it may sell or otherwise dispose of from time to time under this prospectus and the number and percentage of our common stock the selling stockholder will own assuming all of the shares covered by this prospectus are sold by the selling stockholder.

The information set forth below is based upon information obtained from the selling stockholder 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 stockholder as of the date of this prospectus. The percentages of shares owned after the offering are based on 131,160,842 shares of our common stock outstanding as of December 5, 2024, including the shares of common stock registered for resale hereby. Except as described below, to our knowledge, the selling stockholder has not been an officer or director of ours or of our affiliates within the past three years or had any material relationship with us or our affiliates within the past three years.

As used in this prospectus, the term “selling stockholder” includes the selling stockholder set forth below and any pledgees, donees, transferees or other successors-in-interest selling shares received after the date of this prospectus from the selling stockholder as a gift, pledge, or other non-sale related transfer. Beneficial ownership is determined in accordance with Rule 13d-3(d) promulgated by the SEC under the Exchange Act, and includes shares of common stock with respect to which the selling stockholder has voting and investment power. Shares of common stock subject to options, restricted stock units or other rights to purchase which are now exercisable or are exercisable within 60 days after December 5, 2024 are considered outstanding for purposes of computing the beneficial ownership and percentage ownership of the persons holding these options or other rights but not considered outstanding for the purpose of computing the percentage ownership of any other person. The shares underlying the pre-funded warrants issued by the Company in February 2024, which are exercisable for 3,200,005 shares of our common stock, are not considered outstanding for the purpose of computing the beneficial ownership or percentage ownership of any person.

The number of shares in the column “Common Stock That May Be Offered Pursuant to This Prospectus” represents all of the shares of our common stock that the selling stockholder may offer under this prospectus. The column “Beneficial Ownership of Common Stock After the Offering” assumes the sale of all the shares that may be offered by the selling stockholder pursuant to this prospectus and that the selling stockholder does not acquire any additional shares of our common stock before the completion of this offering. However, because the selling stockholder may sell all, some or none of its shares under this prospectus from time to time, or in another permitted manner, we cannot assure you as to the actual number of shares that will be sold by the selling stockholder or that will be held by the selling stockholder after completion of any sales. We do not know how long the selling stockholder will hold the shares before selling them. Other than as described below in the section titled “Certain Relationships and Related Party Transactions,” we currently have no agreements, arrangements or understandings with the selling stockholder regarding the sale or other disposition of any of the shares. See the section titled “Plan of Distribution.”

The shares of common stock being covered hereby may be sold or otherwise disposed of from time to time during the period the registration statement of which this prospectus is a part remains effective, by or for the account of the selling stockholder. After the date of effectiveness, the selling stockholder may have sold or transferred, in transactions covered by this prospectus or in transactions exempt from the registration requirements of the Securities Act, some or all of their shares.

Information about the selling stockholder may change over time. Any changed information will be set forth in an amendment to the registration statement or supplement to this prospectus, to the extent required by law.

Name of Selling Stockholder	Beneficial Ownership of Common Stock Prior to the Offering		Common Stock That May Be Offered Pursuant to This Prospectus	Beneficial Ownership of Common Stock After the Offering	
	Number of Shares	Percent of Class (%)		Number of Shares ⁽¹⁾	Percent of Class (%)
Bristol-Myers Squibb Company	11,006,163 ⁽²⁾	8.39 %	11,006,163	0	0 %

(1) Assumes that all the shares of the selling stockholder covered by this prospectus are sold, and that the selling stockholder does not acquire any additional shares of our common stock before the completion of this offering. However, as the selling stockholder can offer all, some, or none of its common stock, no definitive estimate can be given as to the number of shares that the selling stockholder will ultimately offer or sell under this prospectus.

(2) Consists of 11,006,163 shares of our common stock. The address for the selling stockholder is Route 206 and Province Line Road, Princeton, New Jersey 08543-4000.

Certain Relationships and Related Party Transactions

Registration Rights

Pursuant to the terms of the Securities Purchase Agreement, we agreed to prepare and file a registration statement with the SEC for purposes of registering the resale of 11,006,163 shares of our common stock held by the selling stockholder.

Under the Securities Purchase Agreement, we agreed to use commercially reasonable efforts to cause this registration statement to be declared effective by the SEC as soon as practicable. Additionally, we agreed to maintain the effectiveness of the registration statement until the earliest to occur of: (i) the third (3rd) anniversary of the filing of the registration statement, (ii) the date that all of the shares purchased by the selling stockholder covered by the registration statement have been sold pursuant to the registration statement, or (iii) such time as the shares become eligible for resale by non-affiliates of the selling stockholder without any volume limitations or other restrictions pursuant to Rule 144 under the Securities Act (including, for the avoidance of doubt, Rule 144(i)(2)) or any other rule of similar effect. We have agreed to be responsible for all fees and expenses incurred in connection with the registration of the shares.

In addition, pursuant to the terms of the Securities Purchase Agreement, the selling stockholder has agreed not to, directly or indirectly, sell or transfer any of the shares until September 30, 2027, subject to certain specified conditions and exceptions therein.

We have also agreed, among other things, to indemnify the selling stockholder, its directors, officers, shareholders, members, partners, employees and agents, each other person, if any, who controls such selling stockholder and the directors, officers, shareholders, members, partners, employees and agents of each such controlling person from certain liabilities and to pay all fees and expenses incident to our obligations under the Securities Purchase Agreement.

Research and Collaboration Agreement

On September 28, 2024, we entered into a Research Collaboration and License Agreement (the “Collaboration Agreement”) with Juno Therapeutics, Inc., a wholly-owned subsidiary of the selling stockholder (“BMS”). Under the terms of the Collaboration Agreement, we granted to BMS an exclusive worldwide license to certain Prime Editing technology for developing, manufacturing and commercializing *ex vivo* T-cell therapeutic products directed to select targets.

Under the Collaboration Agreement, we received \$55.0 million as upfront payment and are also eligible to receive more than \$3.5 billion in milestone payments, including up to \$185.0 million upon achievement of certain preclinical development milestones, up to \$1.2 billion upon achievement of certain clinical development milestones and up to \$2.1 billion upon achievement of certain commercialization milestones, along with royalties on net sales.

In addition, under the Collaboration Agreement, we and BMS were required to enter into the Securities Purchase Agreement and complete the private placement.

Unless earlier terminated, the term of the Collaboration Agreement continues until expiration of the last royalty term for the applicable product in the applicable country. The Collaboration Agreement is subject to customary termination provisions, including termination by a party for the other party's uncured, material breach.

The Collaboration Agreement also includes customary representations and warranties, covenants and indemnification obligations.

The description of the Collaboration Agreement is not complete and is qualified in its entirety by reference to the Collaboration Agreement, which has been filed as an exhibit to our Quarterly Report on Form 10-Q for the quarter ended September 30, 2024 filed with the SEC on November 12, 2024. See "Where You Can Find More Information" and "Incorporation of Certain Information by Reference."

PLAN OF DISTRIBUTION

The selling stockholder and any of its pledgees, donees, transferees, assignees or other successors-in-interest may, from time to time, sell, transfer or otherwise dispose of any or all of its shares of common stock or interests in shares of common stock on any stock exchange, market or trading facility on which the shares are traded or in private transactions. These dispositions may be at fixed prices, at prevailing market prices at the time of sale, at prices related to the prevailing market price, at varying prices determined at the time of sale, or at negotiated prices. The selling stockholder may use one or more of the following methods when disposing of the shares or interests therein:

- 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;
- through brokers, dealers or underwriters that may act solely as agents;
- 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;
- through the writing or settlement of options or other hedging transactions entered into after the effective date of the registration statement of which this prospectus is a part, whether through an options exchange or otherwise;
- broker-dealers may agree with the selling stockholder to sell a specified number of such shares at a stipulated price per share;
- a combination of any such methods of disposition; and
- any other method permitted pursuant to applicable law.

The selling stockholder also may resell all or a portion of the shares in open market transactions in reliance upon Rule 144 under the Securities Act, as permitted by that rule, or Section 4(a)(1) under the Securities Act, if available, rather than under this prospectus, provided that it meets the criteria and conform to the requirements of those provisions.

Broker-dealers engaged by the selling stockholder may arrange for other broker-dealers to participate in sales. If the selling stockholder effect 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 stockholder 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. Such commissions will be in amounts to be negotiated, but, except as set forth in a supplement to this prospectus, in the case of an agency transaction will not be in excess of a customary brokerage commission in compliance with Financial Industry Regulatory Authority ("FINRA") Rule 2121; and in the case of a principal transaction a markup or markdown in compliance with FINRA Rule 2121.

In connection with sales of the shares of common stock or otherwise, the selling stockholder may enter into hedging transactions with broker-dealers or other financial institutions, 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 stockholder may also sell shares of common stock short and if such short sale shall take place after the date that this registration statement is declared effective by the SEC, the selling stockholder may 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 stockholder may also loan or pledge shares of common stock to broker-dealers that in turn may sell such shares, to the extent permitted by applicable law. The selling stockholder may also enter into option or other transactions with

broker-dealers or other financial institutions or the creation of one or more derivative securities which require the delivery to such broker-dealer or other financial institution of shares offered by this prospectus, which shares such broker-dealer or other financial institution may resell pursuant to this prospectus (as supplemented or amended to reflect such transaction). Notwithstanding the foregoing, the selling stockholder has been advised that it may not use shares registered on this registration statement to cover short sales of our common stock made prior to the date the registration statement, of which this prospectus forms a part, has been declared effective by the SEC.

The selling stockholder may, from time to time, pledge or grant a security interest in some or all of the shares of common stock owned by it and, if it defaults in the performance of its 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 stockholders to include the pledgee, transferee or other successors in interest as selling stockholders under this prospectus. The selling stockholder 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.

The selling stockholder and any underwriters, broker-dealers or agents participating in the distribution of the shares of common stock may be deemed to be “underwriters” within the meaning of Section 2(a)(11) of the Securities Act in connection with such sales. In such event, any commissions paid, or any discounts or concessions allowed to, any such broker-dealer or agent and any profit on the resale of the shares purchased by them may be deemed to be underwriting commissions or discounts under the Securities Act. Selling stockholders who are “underwriters” within the meaning of Section 2(a)(11) of the Securities Act will be subject to the applicable prospectus delivery requirements of the Securities Act including Rule 172 thereunder and may be subject to certain statutory liabilities of, including but not limited to, Sections 11, 12 and 17 of the Securities Act and Rule 10b-5 under the Exchange Act.

The selling stockholder has informed the Company that it is not a registered broker-dealer and does not have any written or oral agreement or understanding, directly or indirectly, with any person to distribute the common stock. Upon the Company being notified in writing by the selling stockholder that any material arrangement has been entered into with a broker-dealer for the sale of common stock through a block trade, special offering, exchange distribution or secondary distribution or a purchase by a broker or dealer, a supplement to this prospectus will be filed, if required, pursuant to Rule 424(b) under the Securities Act, disclosing (i) the name of the selling stockholder and of the participating broker-dealer(s), (ii) the number of shares involved, (iii) the price at which such the shares of common stock were sold, (iv) the commissions paid or discounts or concessions allowed to such broker-dealer(s), where applicable, (v) that such broker-dealer(s) did not conduct any investigation to verify the information set out or incorporated by reference in this prospectus, and (vi) other facts material to the transaction. The maximum commission or discount to be received by any member of the FINRA or independent broker-dealer will not be greater than 8% of the initial gross proceeds from the sale of any security being sold.

Under the securities laws of some states, the shares of common stock may be sold in such states only through registered or licensed brokers or dealers. In addition, in some states the shares of common stock may not be sold unless such shares have been registered or qualified for sale in such state or an exemption from registration or qualification is available and is complied with.

There can be no assurance that the selling stockholder will sell any or all of the shares of common stock registered pursuant to the shelf registration statement, of which this prospectus forms a part.

Under applicable rules and regulations under the Exchange Act, any person engaged in the distribution of the resale securities may not simultaneously engage in market making activities with respect to the common stock for the applicable restricted period, as defined in Regulation M, prior to the commencement of the distribution. In addition, the Selling Stockholder will be subject to applicable provisions of the Exchange Act and the rules and regulations thereunder, including Regulation M, which may limit the timing of purchases and sales of the common stock by the Selling Stockholder or any other person. We will make copies of this prospectus available to the Selling Stockholder and have informed it of the need to deliver a copy of this prospectus to each purchaser at or prior to the time of the sale (including by compliance with Rule 172 under the Securities Act).

We will pay all expenses of the registration of the shares of common stock pursuant to the Securities Purchase Agreement, including, without limitation, SEC filing fees and expenses of compliance with state securities or “blue sky” laws; provided, however, that the selling stockholder will pay all underwriting discounts and selling commissions, if any and any related legal expenses incurred by it. We will indemnify the selling stockholder against certain liabilities, including some liabilities under the Securities Act, in accordance with the Securities Purchase Agreement, or the selling stockholder will be entitled to contribution. We may be indemnified by the selling stockholder against civil liabilities, including liabilities under the Securities Act, that may arise from any written information furnished to us by the selling stockholder specifically for use in this prospectus, in accordance with the terms of the Securities Purchase Agreement, or we may be entitled to contribution.

LEGAL MATTERS

The validity of the shares of common stock offered hereby will be passed upon for us by Goodwin Procter LLP, Boston, Massachusetts.

EXPERTS

The financial statements incorporated in this prospectus by reference to the Annual Report on Form 10-K for the year ended December 31, 2023 have been so incorporated in reliance on the report of PricewaterhouseCoopers LLP, an independent registered public accounting firm, given on the authority of said firm as experts in auditing and accounting.

WHERE YOU CAN FIND MORE INFORMATION

We file annual, quarterly and current reports, proxy statements and other information with the SEC. Our SEC filings are available to the public over the Internet at the SEC's website at www.sec.gov and on our investor website at www.primemedicine.com. Information contained in or accessible through our website is not a part of this prospectus and is not incorporated by reference in this prospectus.

This prospectus is part of a registration statement that we have filed with the SEC. Certain information in the registration statement has been omitted from this prospectus in accordance with the rules of the SEC. For more detail about us and any securities that may be offered by this prospectus, you may examine the registration statement of which this prospectus forms a part, including its exhibits and schedules. Statements contained in this prospectus as to the contents of any contract or other document are not necessarily complete, and in each instance we refer you to the copy of the contract or document filed as an exhibit to the registration statement, each such statement being qualified in all respects by such reference.

INCORPORATION OF CERTAIN INFORMATION BY REFERENCE

The SEC allows us to incorporate by reference in this prospectus much of the information we file with the SEC, which means that we can disclose important information to you by referring you to those publicly available documents. The information that we incorporate by reference in this prospectus is considered to be part of this prospectus. Because we are incorporating by reference future filings with the SEC, this prospectus is continually updated and those future filings may modify or supersede some of the information included or incorporated in this prospectus. This means that you must look at all of the SEC filings that we incorporate by reference to determine if any of the statements in this prospectus or in any document previously incorporated by reference have been modified or superseded. This prospectus incorporates by reference the documents listed below and any future filings we make with the SEC under Sections 13(a), 13(c), 14 or 15(d) of the Exchange Act, including all filings made after the date of the filing of this registration statement and prior to the effectiveness of this registration statement, except as to any portion of any future report or document that is not deemed filed under such provisions until we sell all of the securities:

- Annual Report on Form 10-K for the fiscal year ended December 31, 2023, filed with the SEC on [March 1, 2024](#);
- The information specifically incorporated by reference into our Annual Report on Form 10-K for the year ended December 31, 2023 from our definitive proxy statement on [Schedule 14A](#) (other than information furnished rather than filed), which was filed with the SEC on April 29, 2024;
- Quarterly Reports on Form 10-Q for the fiscal quarters ended March 31, 2024, June 30, 2024 and September 30, 2024, filed with the SEC on [May 10, 2024](#), [August 8, 2024](#) and [November 12, 2024](#), respectively;
- Current Reports on Form 8-K filed with the SEC on [January 5, 2024](#) (two filings), [February 16, 2024](#), [May 21, 2024](#), [June 12, 2024](#), and [September 30, 2024](#); and
- The description of our common stock contained in our Registration Statement on Form 8-A (File No. 001-41536) as filed with the SEC on October 17, 2022, including any amendments or reports filed for the purpose of updating such description, including [Exhibit 4.3](#) to our Annual Report on Form 10-K for the year ended December 31, 2023, as filed with the SEC on March 1, 2024.

In addition, all reports and other documents filed by us pursuant to the Exchange Act after the date of the initial registration statement and prior to effectiveness of the registration statement shall be deemed to be incorporated by reference into this prospectus.

You may request a copy of these filings, at no cost, by writing or telephoning us at the following address or telephone number:

Prime Medicine, Inc.
60 First Street
Cambridge, MA 02141
(617) 465-0013

You may also access these documents, free of charge on the SEC's website at www.sec.gov or on our website at www.primemedicine.com. Information contained in or accessible through our website does not constitute a part of this prospectus and is not incorporated by reference in this prospectus. We have included our website solely as an inactive textual reference.

Notwithstanding the foregoing, unless specifically stated to the contrary, information that we furnish (and that is not deemed "filed" with the SEC) under Items 2.02 and 7.01 of any Current Report on Form 8-K, including the related exhibits under Item 9.01, is not incorporated by reference into this prospectus or the registration statement of which this prospectus is a part.

This prospectus is part of a registration statement we filed with the SEC. We have incorporated exhibits into this registration statement. You should read the exhibits carefully for provisions that may be important to you.

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



11,006,163 Shares of Common Stock
Offered by the Selling Stockholder

PROSPECTUS

, 2024

PART II
INFORMATION NOT REQUIRED IN PROSPECTUS

Item 14. Other Expenses of Issuance and Distribution.

The following table sets forth the expenses payable by Prime Medicine, Inc. (the “Registrant,” the “Company,” “we,” “us” and “our”) in connection with the issuance and distribution of the shares of common stock being registered. None of the expenses listed below are to be borne by the selling stockholder named in the prospectus that forms a part of this registration statement. All the amounts shown are estimates, except for the Securities and Exchange Commission (“SEC”) registration fee.

SEC registration fee	\$	5,628.05
Legal fees and expenses		50,000
Accounting fees and expenses		25,000
Transfer agent fees and expenses		5,500
Printing and miscellaneous expenses		5,000
Total	\$	91,128.05

Item 15. Indemnification of Directors and Officers.

Section 145 of the Delaware General Corporation Law (the “DGCL”) authorizes a corporation to indemnify its directors and officers against liabilities arising out of actions, suits and proceedings to which they are made or threatened to be made a party by reason of the fact that they have served or are currently serving as a director or officer to a corporation. The indemnity may cover expenses (including attorneys’ fees) judgments, fines and amounts paid in settlement actually and reasonably incurred by the director or officer in connection with any such action, suit or proceeding. Section 145 permits corporations to pay expenses (including attorneys’ fees) incurred by directors and officers in advance of the final disposition of such action, suit or proceeding. In addition, Section 145 provides that a corporation has the power to purchase and maintain insurance on behalf of its directors and officers against any liability asserted against them and incurred by them in their capacity as a director or officer, or arising out of their status as such, whether or not the corporation would have the power to indemnify the director or officer against such liability under Section 145.

We have adopted provisions in our certificate of incorporation and bylaws that limit or eliminate the personal liability of our directors to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended. Consequently, a director will not be personally liable to us or our stockholders for monetary damages or breach of fiduciary duty as a director, except for liability for:

- any breach of the director’s duty of loyalty to us or our stockholders;
- any act or omission not in good faith or that involves intentional misconduct or a knowing violation of law;
- any unlawful payments related to dividends or unlawful stock purchases, redemptions or other distributions; or
- any transaction from which the director derived an improper personal benefit.

These limitations of liability do not alter director liability under the federal securities laws and do not affect the availability of equitable remedies such as an injunction or rescission.

In addition, our bylaws provide that:

- we will indemnify our directors, officers and, in the discretion of our board of directors, certain employees to the fullest extent permitted by the DGCL, as it now exists or may in the future be amended; and

- we will advance reasonable expenses, including attorneys' fees, to our directors and, in the discretion of our board of directors, to our officers and certain employees, in connection with legal proceedings relating to their service for or on behalf of us, subject to limited exceptions.

We have entered into indemnification agreements with each of our directors and executive officers.

These agreements provide that we will indemnify each of our directors, our executive officers and, at times, their affiliates to the fullest extent permitted by Delaware law. We will advance expenses, including attorneys' fees (but excluding judgments, fines and settlement amounts), to each indemnified director, executive officer or affiliate in connection with any proceeding in which indemnification is available and we will indemnify our directors and officers for any action or proceeding arising out of that person's services as a director or officer brought on behalf of us or in furtherance of our rights. Additionally, certain of our directors or officers may have certain rights to indemnification, advancement of expenses or insurance provided by their affiliates or other third parties, which indemnification relates to and might apply to the same proceedings arising out of such director's or officer's services as a director referenced herein. Nonetheless, we have agreed in the indemnification agreements that our obligations to those same directors or officers are primary and any obligation of such affiliates or other third parties to advance expenses or to provide indemnification for the expenses or liabilities incurred by those directors are secondary.

We also maintain general liability insurance which covers certain liabilities of our directors and officers arising out of claims based on acts or omissions in their capacities as directors or officers, including liabilities under the Securities Act of 1933, as amended (the "Securities Act").

Item 16. Exhibits and Financial Statement Schedules.

(a) Exhibits

Exhibit No.	Description
3.1	Third Amended and Restated Certificate of Incorporation of Prime Medicine, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on October 24, 2022).
3.2	Certificate of Amendment to Third Amended and Restated Certificate of Incorporation of Prime Medicine, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on June 12, 2024).
3.3	Second Amended and Restated Bylaws of Prime Medicine, Inc. (incorporated by reference to Exhibit 3.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on May 21, 2024).
4.1	Amended and Restated Investors' Rights Agreement among the Registrant and certain of its stockholders, dated April 20, 2021 (incorporated by reference to Exhibit 4.1 of the Registrant's Registration Statement on Form S-1/A (File No. 333-267579) filed on October 17, 2022).
4.2	Form of Common Stock Certificate (incorporated by reference to Exhibit 4.2 of the Registrant's Registration Statement on Form S-1/A (File No. 333-267579) filed on October 17, 2022).
4.3	Form of Pre-Funded Warrant (incorporated by reference to Exhibit 4.1 to the Registrant's Current Report on Form 8-K, filed with the SEC on February 16, 2024).
5.1*	Opinion of Goodwin Procter LLP.
10.1+†	Securities Purchase Agreement, dated September 28, 2024, by and between Bristol-Myers Squibb Company and the Registrant (incorporated by reference to Exhibit 10.1 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on November 12, 2024).
10.2†	Research Collaboration and License Agreement, dated September 28, 2024, by and between Juno Therapeutics, Inc. and the Registrant (incorporated by reference to Exhibit 10.2 to the Registrant's Quarterly Report on Form 10-Q, filed with the SEC on November 12, 2024).
23.1*	Consent of PricewaterhouseCoopers LLP, independent registered public accounting firm.
23.2*	Consent of Goodwin Procter LLP (included in Exhibit 5.1).
24.1*	Power of Attorney (included in the signature pages to the Registration Statement).
107*	Filing Fee Table.

* Filed herewith.

† Portions of this exhibit (indicated by asterisks) have been omitted in accordance with Item 601(b)(10) of Regulation S-K.

+ Annexes, schedules and/or exhibits have been omitted pursuant to Item 601(a)(5) of Regulation S-K. The Registrant agrees to furnish supplementally a copy of any omitted attachment to the SEC on a confidential basis upon request.

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 paragraphs (a)(1)(i), (a)(1)(ii) and (a)(1)(iii) 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 Securities Exchange Act of 1934, as amended (the "Exchange Act"), that are incorporated by reference in the registration statement, or is contained in a form of prospectus filed pursuant to Rule 424(b) that is part of the 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.
- (b) The undersigned Registrant hereby undertakes 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.
- (c) Insofar as indemnification for liabilities arising under the Securities Act may be permitted to directors, officers and controlling persons of the Registrant pursuant to the indemnification provisions described herein, or otherwise, the Registrant has been advised that in the opinion of the SEC such indemnification is against public policy as expressed in the Securities 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 Securities 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 Cambridge, Commonwealth of Massachusetts, on December 13, 2024.

PRIME MEDICINE, INC.

By: /s/ Keith Gottesdiener
Name: Keith Gottesdiener
Title: President and Chief Executive Officer

POWER OF ATTORNEY AND SIGNATURES

KNOW ALL BY THESE PRESENT, that each individual whose signature appears below hereby constitutes and appoints Keith Gottesdiener, Allan Reine, and Carman Alenson as such person's true and lawful attorney-in-fact and agent with full power of substitution and resubstitution, for such person in such person's name, place and stead, in any and all capacities, to sign any and all amendments (including post-effective amendments) to this Registration Statement on Form S-3, and to file the same, with all exhibits thereto, and all documents in connection therewith, with the Securities and Exchange Commission granting unto each 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 and about the premises, as fully to all intents and purposes as such person might or could do in person, hereby ratifying and confirming all that any said attorney-in-fact and agent, or any substitute or substitutes of any of them, 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 person in the capacities and on the date indicated.

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

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Keith Gottesdiener</u> Keith Gottesdiener	President, Chief Executive Officer and Director (Principal Executive Officer)	December 13, 2024
<u>/s/ Allan Reine</u> Allan Reine	Chief Financial Officer (Principal Financial Officer)	December 13, 2024
<u>/s/ Carman Alenson</u> Carman Alenson	Chief Accounting Officer (Principal Accounting Officer)	December 13, 2024
<u>/s/ Robert Nelsen</u> Robert Nelsen	Director	December 13, 2024
<u>/s/ David Schenkein</u> David Schenkein	Director	December 13, 2024
<u>/s/ Thomas Cahill</u> Thomas Cahill	Director	December 13, 2024
<u>/s/ Michael Kelly</u> Michael Kelly	Director	December 13, 2024
<u>/s/ Wendy Chung</u> Wendy Chung	Director	December 13, 2024
<u>/s/ Kaye Foster</u> Kaye Foster	Director	December 13, 2024
<u>/s/ Jeff Marrazzo</u> Jeff Marrazzo	Director	December 13, 2024

Calculation of Filing Fee Tables

Form S-3

(Form Type)

Prime Medicine, Inc.

(Exact Name of Registrant as Specified in its Charter)

Table 1: Newly Registered and Carry Forward Securities

	Security Type	Security Class Title	Fee Calculation or Carry Forward Rule	Amount Registered (1)(2)	Proposed Maximum Offering Price Per Unit (3)	Maximum Aggregate Offering Price (3)	Fee Rate	Amount of Registration Fee	Carry Forward Form Type	Carry Forward File Number	Carry Forward Initial Effective Date	Filing Fee Previously Paid In Connection with Unsold Securities to be Carried Forward
Newly Registered Securities												
Fees to Be Paid	Equity	Common Stock, \$0.00001 par value per share	457(c)	11,006,163	\$3.34	\$36,760,584.42	0.00015310	\$5,628.05	-	-	-	-
Carry Forward Securities												
Carry Forward Securities	-	-	-	-	-	-	-	-	-	-	-	-
Total Offering Amounts						\$36,760,584.42		\$5,628.05				
Total Fees Previously Paid								-				
Total Fee Offsets								-				
Net Fee Due								\$5,628.05				

(1) The registrant is hereby registering for resale or other disposition, from time to time, by the selling stockholder (the “selling stockholder”) named in the prospectus that forms a part of this registration statement (this “registration statement”) an aggregate of up to 11,006,163 shares of the registrant’s common stock, par value \$0.00001 per share (the “common stock”). Pursuant to Rule 416 under the Securities Act of 1933, as amended (the “Securities Act”), this registration statement also covers any additional number of shares of common stock issuable upon stock splits, stock dividends, or other distribution, recapitalization or similar events with respect to the shares of common stock being registered pursuant to this registration statement.

(2) Represents the maximum number of shares of the common stock that may be offered and sold, from time to time, by the selling stockholder, which shares were issued to the selling stockholder in a private placement.

(3) Estimated solely for the purpose of calculating the registration fee in accordance with Rule 457(c) under the Securities Act. The price per share and aggregate offering price are based on the average of the high and low prices of the registrant’s common stock on December 9, 2024, as reported on The Nasdaq Global Market.

December 13, 2024

Prime Medicine, Inc.
60 First Street
Cambridge, MA 02141

Re: Securities Registered under Registration Statement on Form S-3

We have acted as counsel to you in connection with your filing of a Registration Statement on Form S-3 (as amended or supplemented, the "Registration Statement") filed on December 13, 2024 with the Securities and Exchange Commission (the "Commission") pursuant to the Securities Act of 1933, as amended (the "Securities Act"), relating to the registration by Prime Medicine, Inc., a Delaware corporation (the "Company"), of up to 11,006,163 shares (the "Shares") of the Company's common stock, par value \$0.00001 per share ("Common Stock"), to be sold by the selling stockholder listed in the Registration Statement under "Selling Stockholder."

We have reviewed such documents and made such examination of law as we have deemed appropriate to give the opinion set forth below. We have relied, without independent verification, on certificates of public officials and, as to matters of fact material to the opinion set forth below, on certificates of officers of the Company.

The opinion set forth below is limited to the Delaware General Corporation Law.

Based on the foregoing, we are of the opinion that the Shares have been duly authorized and validly issued and are fully paid and non-assessable.

This opinion letter and the opinion it contains shall be interpreted in accordance with the Core Opinion Principles as published in *74 Business Lawyer* 815 (Summer 2019).

We hereby consent to the inclusion of this opinion as Exhibit 5.1 to the Registration Statement and to the references to our firm under the caption "Legal Matters" in the Registration Statement. In giving our consent, we do not admit that we are in the category of persons whose consent is required under Section 7 of the Securities Act or the rules and regulations thereunder.

Very truly yours,

/s/ Goodwin Procter LLP

GOODWIN PROCTER
LLP

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in this Registration Statement on Form S-3 of Prime Medicine, Inc. of our report dated March 1, 2024 relating to the financial statements, which appears in Prime Medicine, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2023. We also consent to the reference to us under the heading "Experts" in such Registration Statement.

/s/ PricewaterhouseCoopers LLP
Boston, Massachusetts
December 13, 2024