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

SCHEDULE 13D

Under the Securities Exchange Act of 1934
(Amendment No. 1)*

Prime Medicine, Inc.

(Name of Issuer)

Common Stock, \$0.00001 par value
(Title of Class of Securities)

74168J101
(CUSIP Number)

Mark McDonnell
ARCH Venture Management, LLC
8755 W. Higgins Road Suite 1025
Chicago, IL 60631

(Name, Address and Telephone Number of Person Authorized to Receive Notices and Communications)

November 12, 2024
(Date of Event which Requires Filing of this Statement)

*The remainder of this cover page shall be filled out for a reporting person's initial filing on this form with respect to the subject class of securities, and for any subsequent amendment containing information which would alter disclosures provided in a prior cover page.

The information required on the remainder of this cover page shall not be deemed to be "filed" for the purpose of Section 18 of the Securities Exchange Act of 1934 ("Act") or otherwise subject to the liabilities of that section of the Act but shall be subject to all other provisions of the Act (however, see the Notes).

If the filing person has previously filed a statement on Schedule 13G to report the acquisition that is the subject of this Schedule 13D, and is filing this schedule because of §§240.13d-1(e), 240.13d-1(f) or 240.13d-1(g), check the following box.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB control number.

1	NAME OF REPORTING PERSONS ARCH Venture Fund X, L.P.	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS WC	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares
	8	SHARED VOTING POWER 15,456,594 Shares
	9	SOLE DISPOSITIVE POWER 0 Shares
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%	
14	TYPE OF REPORTING PERSON PN	

1	NAME OF REPORTING PERSONS ARCH Venture Fund X Overage, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON PN		

1	NAME OF REPORTING PERSONS ARCH Venture Fund XII, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON PN		

1	NAME OF REPORTING PERSONS ARCH Venture Partners X, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON PN		

1	NAME OF REPORTING PERSONS ARCH Venture Partners X Overage, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON PN		

1	NAME OF REPORTING PERSONS ARCH Venture Partners XII, L.P.		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS WC		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON PN		

1	NAME OF REPORTING PERSONS ARCH Venture Partners X, LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON OO		

1	NAME OF REPORTING PERSONS ARCH Venture Partners XII, LLC		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION Delaware		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON OO		

1	NAME OF REPORTING PERSONS Robert Nelsen		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 55,142 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 55,142 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,511,736 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON IN		

1	NAME OF REPORTING PERSONS Keith Crandell		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
	8	SHARED VOTING POWER 15,456,594 Shares	
	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON IN		

1	NAME OF REPORTING PERSONS Kristina Burow	
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>	
3	SEC USE ONLY	
4	SOURCE OF FUNDS AF	
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>	
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States	
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares
	8	SHARED VOTING POWER 15,456,594 Shares
	9	SOLE DISPOSITIVE POWER 0 Shares
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares	
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>	
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%	
14	TYPE OF REPORTING PERSON IN	

1	NAME OF REPORTING PERSONS Steven Gillis		
2	CHECK THE APPROPRIATE BOX IF A MEMBER OF A GROUP (a) <input type="checkbox"/> (b) <input type="checkbox"/>		
3	SEC USE ONLY		
4	SOURCE OF FUNDS AF		
5	CHECK BOX IF DISCLOSURE OF LEGAL PROCEEDINGS IS REQUIRED PURSUANT TO ITEMS 2(d) or 2(e) <input type="checkbox"/>		
6	CITIZENSHIP OR PLACE OF ORGANIZATION United States		
NUMBER OF SHARES BENEFICIALLY OWNED BY EACH REPORTING PERSON WITH	7	SOLE VOTING POWER 0 Shares	
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	9	SOLE DISPOSITIVE POWER 0 Shares	
	10	SHARED DISPOSITIVE POWER 15,456,594 Shares	
11	AGGREGATE AMOUNT BENEFICIALLY OWNED BY EACH REPORTING PERSON 15,456,594 Shares		
12	CHECK BOX IF THE AGGREGATE AMOUNT IN ROW (11) EXCLUDES CERTAIN SHARES <input type="checkbox"/>		
13	PERCENT OF CLASS REPRESENTED BY AMOUNT IN ROW (11) 11.8%		
14	TYPE OF REPORTING PERSON IN		

ITEM 1. SECURITY AND ISSUER.

This statement relates to the Common Stock, \$0.00001 par value per share (the “Common Stock”), of Prime Medicine, Inc. (the “Issuer”) having its principal executive office at 21 Erie St., Cambridge, MA 02139 USA.

ITEM 2. IDENTITY AND BACKGROUND.

- (a) This statement is being filed by (1) ARCH Venture Fund X, L.P. (“AVF X”), (2) ARCH Venture Partners X, L.P. (“AVP X LP”) which is the sole general partner of AVF X, (3) ARCH Venture Partners X, LLC (“AVP X LLC”) which is the sole general partner of AVP X LP and AVP X Overage LP (defined below), (4) ARCH Venture Fund X Overage, L.P. (“AVF X Overage”), (5) ARCH Venture Partners X Overage, L.P. (“AVP X Overage LP”), which is the sole general partner of AVF X Overage, (6) ARCH Venture Fund XII, L.P. (“AVF XII”), (7) ARCH Venture Partners XII, L.P. (“AVP XII LP”) which is the sole general partner of AVF XII, (8) ARCH Venture Partners XII, LLC (“AVP XII LLC”) which is the sole general partner of AVP XII LP, (9) Keith Crandell (“Crandell”), (10) Robert Nelsen (“Nelsen”), (11) Kristina Burow (“Burow”), and (12) Steven Gillis (“Gillis”, and together with Nelsen, Crandell and Burow, referred to individually as “Committee Member” or collectively as either the “AVP X Investment Committee Members” or the “AVP XII Investment Committee Members”). Each of the individuals and entities above shall be referred to herein as a “Reporting Person” and collectively as the “Reporting Persons”.
 - (b) The business address of each of the Reporting Persons is 8755 West Higgins Road, Suite 1025, Chicago, IL, 60631.
 - (c) The principal business of AVP X LP is to act as the general partner of AVF X, the principal business of AVP X Overage LP is to act as the general partner of AVF X Overage, and the principal business of AVP XII is to act as the general partner of AVF XII. The principal business of AVP X LLC is to act as the general partner of AVP X LP and AVF X Overage LP, and the principal business of AVP XII LLC is to act as the general partner of AVP XII LP. AVP X Investment Committee Members and AVP XII Investment Committee Members act as investment committee members of AVP X LLC and AVP XII LLC, respectively, and as managing directors or investment committee members of a number of affiliated partnerships with similar businesses.
 - (d) During the five years prior to the date hereof, none of the Reporting Persons has been convicted in a criminal proceeding.
 - (e) During the five years prior to the date hereof, none of the Reporting Persons has been a party to a civil proceeding of a judicial or administrative body of competent jurisdiction ending in a judgment, decree or final order enjoining future violations of, or prohibiting or mandating activities subject to, Federal or State securities laws or finding any violation with respect to such laws.
 - (f) Each of AVF X, AVP X LP, AVF X Overage, AVP X Overage LP, AVF XII and AVP XII LP, are limited partnerships organized under the laws of the State of Delaware. Each of AVP X LLC and AVP XII LLC is a limited liability company organized under the laws of the State of Delaware. Each Committee Member is a US citizen.
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ITEM 5. INTEREST OF SECURITIES OF THE ISSUER.

- (a) AVF X is the record owner of 6,128,297 shares of Common Stock (“AVF X Record Shares”). AVP X LP, as the sole general partner of AVF X LP, may be deemed to beneficially own the AVF X Record Shares. AVP X LLC, as the sole general partner of AVP X LP, may be deemed to beneficially own the AVF X Record Shares.

AVF X Overage is the record holder of 6,128,297 shares of Common Stock (“AVF X Overage Record Shares”). AVP X Overage LP, as the sole general partner of AVF X Overage, may be deemed to beneficially own the AVF X Overage Record Shares. AVP X LLC, as the sole general partner of AVP X Overage LP, may be deemed to beneficially own the AVF X Overage Record Shares.

AVF XII is the record holder of 3,200,000 shares of Common Stock (“AVF XII Record Shares”). AVP XII LP, as the sole general partner of AVF XII LP, may be deemed to beneficially own the AVF XII Record Shares. AVP XII LLC, as the sole general partner of AVP XII LP, may be deemed to beneficially own the AVF XII Overage Record Shares.

By virtue of their relationship as affiliated entities who have overlapping general partners and investment committee members, each of the Committee Members and direct and indirect general partners of AVF X, AVF X Overage and AVF XII may be deemed to share the power to direct AVF X Record Shares, AVF Overage X Record Shares and AVF XII Record Shares (collectively the “Record Shares”).

Nelsen and his related trusts are also the owner of 16,080 shares of common stock of the Issuer and is the holder of vested options to purchase 39,062 shares of Common Stock (“Nelsen Options”).

Each Reporting Person disclaims beneficial ownership of the Record Shares except for the shares, if any, held of record by such Reporting Person.

The percentage of outstanding Common Stock of the Issuer which may be deemed to be beneficially owned by each Reporting Person (other than Nelsen) is set forth on Line 13 of such Reporting Person’s cover sheet. Such percentage was calculated based on the 131,160,842 shares of Common Stock reported by the Issuer to be outstanding on October 31, 2024 in the Issuer’s Form 10-Q filed with the Securities and Exchange Commission on November 12, 2024. For Nelsen, the Nelsen Options were included in the number of shares of Common Stock outstanding.

- (b) Regarding the number of shares as to which such person has:
- (i) sole power to vote or to direct the vote: See line 7 of cover sheets.
 - (ii) shared power to vote or to direct the vote: See line 8 of cover sheets.
 - (iii) sole power to dispose or to direct the disposition: See line 9 of cover sheets.
 - (iv) shared power to dispose or to direct the disposition: See line 10 of cover sheets.
- (c) None of the Reporting Persons has effected any transaction in the Common Stock during the last 60 days. This Amendment No. 1 is being filed voluntarily due to an issuance of securities by the Issuer as reported on the Issuer’s 10-Q filed with the Securities and Exchange Commission on November 12, 2024, which caused the percentage of outstanding Common Stock of the Issuer deemed to be beneficial owned by the Reporting Persons to reduce by one percent or more.
- (d) No other person is known to have the right to receive or the power to direct the receipt of dividends from, or any proceeds from the sale of, shares beneficially owned by any of the Reporting Persons.
- (e) Not applicable.
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ITEM 6. CONTRACTS, ARRANGEMENTS, UNDERTAKINGS OR RELATIONSHIPS WITH RESPECT TO SECURITIES OF THE ISSUER.

AVF X and AVF X Overage are parties to that certain Amended and Restated Investors' Rights Agreement, dated April 20, 2021, the "Investor Rights Agreement"), which is attached as Exhibit 4.1+ to the Issuer's Form S-1 filed on September 23, 2022. Effective as of the closing of the Issuer's initial public offering, the covenants relating to delivery of financial statements and inspection rights set forth in Section 3 were terminated and rights of first offer were terminated. Pursuant to the Investor Rights Agreement, AVF X and AVF X Overage have certain registration rights with respect to its Common Stock. Specifically, the Issuer has granted demand, piggyback and Form S-3 registration rights, which will terminate upon the earlier of (i) with respect to each stockholder, such date on which all registrable shares held by such stockholder may immediately be sold during any three-month period pursuant to Rule 144 of the Securities Act of 1933, as amended, (ii) the occurrence of a deemed liquidation event, as defined in the Issuer's amended and restated certificate of incorporation, as currently in effect, and (iii) the fifth anniversary of the IPO.

The foregoing description of the Investor Rights Agreement does not purport to be complete and is qualified in its entirety by reference to the full text of such agreement filed as an exhibit to this Schedule 13D and is incorporated herein by reference.

ITEM 7. MATERIAL TO BE FILED AS EXHIBITS.

[Exhibit 1 - Agreement of Joint Filing](#)

[Exhibit 2 - Agreement of Joint Filing](#)

[Exhibit 3 - Amended and Restated Investors' Rights Agreement, dated April 20, 2021, as amended, by and among the Issuer and certain of its stockholders \(incorporated by reference to Exhibit 4.1+ to the Issuer's Registration Statement on Form S-1 \(File No.\), as filed with the Securities and Exchange Commission on September 23, 2022\)](#)

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: November 22, 2024

ARCH VENTURE FUND X, L.P.

By: ARCH Venture Partners X, L.P.
its General Partner

By: ARCH Venture Partners X, LLC
its General Partner

By: _____*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, L.P.

By: ARCH Venture Partners X, LLC
its General Partner

By: _____*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, LLC

By: _____*
Keith Crandell
Managing Director

ARCH VENTURE FUND X OVERAGE, L.P.

By: ARCH Venture Partners X Overage, L.P.
its General Partner

By: ARCH Venture Partners X, LLC
its General Partner

By: _____*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X OVERAGE, L.P.

By: ARCH Venture Partners X, LLC
its General Partner

By: _____*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, LLC

By: *
Robert Nelsen
Managing Director

 *
Kristina Burow

 *
Keith Crandell

 *
Steven Gillis

 *
Robert Nelsen

* By: /s/ Mark McDonnell
Mark McDonnell
Attorney-in-Fact

* This Schedule 13D was executed by Mark McDonnell pursuant to Powers of Attorney filed as Exhibit 24 and 24.1 to the Form 3 relating to the beneficial ownership of shares of Prime Medicine, Inc. by the Reporting Persons filed with the Securities Exchange Commission on October 19, 2022 and incorporated herein in its entirety by reference.

EXHIBIT 1**AGREEMENT OF JOINT FILING**

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, the undersigned hereby agree that only one statement containing the information required by Schedule 13D need be filed with respect to the ownership by each of the undersigned of shares of Common Stock of Prime Medicine, Inc.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

Date: November 22, 2024

ARCH VENTURE FUND X, L.P.

By: ARCH Venture Partners IX, L.P.
its General Partner

By: ARCH Venture Partners X, LLC
its General Partner

By: _____
*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, L.P.

By: ARCH Venture Partners X, LLC
its General Partner

By: _____
*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, LLC

By: _____
*
Robert Nelsen
Managing Director

ARCH VENTURE FUND X OVERAGE, L.P.

By: ARCH Venture Partners X Overage, L.P.
its General Partner

By: ARCH Venture Partners X, LLC
its General Partner

By: _____
*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X OVERAGE, L.P.

By: ARCH Venture Partners X, LLC
its General Partner

By: _____
*
Robert Nelsen
Managing Director

ARCH VENTURE PARTNERS X, LLC

By: _____
*
Robert Nelsen
Managing Director

*
Keith Crandell

*
Robert Nelsen

*
Kristina Burow

*
Steven Gillis

* By: /s/ Mark McDonnell
Mark McDonnell
Attorney-in-Fact

* This Agreement of Joint Filing was executed by Mark McDonnell pursuant to a Powers of Attorney filed as Exhibit 24 and 24.1 to the Form 3 relating to the beneficial ownership of shares of Prime Medicine, Inc. by the Reporting Persons filed with the Securities Exchange Commission on October 19, 2022 and incorporated herein in its entirety by reference.

SIGNATURE

After reasonable inquiry and to the best of my knowledge and belief, I certify that the information set forth in this statement is true, complete and correct.

Date: November 22, 2024

ARCH VENTURE FUND XII, L.P.

By: ARCH Venture Partners XII, L.P.
its General Partner

By: ARCH Venture Partners XII, LLC
its General Partner
By: _____
*
Keith Crandell
Managing Director

ARCH VENTURE PARTNERS XII, L.P.

By: ARCH Venture Partners XII, LLC
its General Partner

By: _____
*
Keith Crandell
Managing Director

ARCH VENTURE PARTNERS XII, LLC

By: _____
*
Keith Crandell
Managing Director

*
Keith Crandell

*
Robert Nelsen

*
Kristina Burow

*
Steven Gillis

* By: /s/ Mark McDonnell
Mark McDonnell
Attorney-in-Fact

* This Schedule 13D was executed by Mark McDonnell pursuant to a Power of Attorney filed as Exhibit 24.4 to the Form 3 relating to the beneficial ownership of shares of Neumora Therapeutics, Inc. by the Reporting Persons filed with the Securities Exchange Commission on September 14, 2023 and incorporated herein in its entirety by reference.

AGREEMENT OF JOINT FILING

Pursuant to Rule 13d-1(k)(1) under the Securities Exchange Act of 1934, the undersigned hereby agree that only one statement containing the information required by Schedule 13D need be filed with respect to the ownership by each of the undersigned of shares of Common Stock of Prime Medicine, Inc.

This Agreement may be executed in any number of counterparts, each of which shall be deemed an original.

Date: November 22, 2024

ARCH VENTURE FUND XII, L.P.

By: ARCH Venture Partners XII, L.P.
its General Partner

By: ARCH Venture Partners XII, LLC
its General Partner

By: _____*
Keith Crandell
Managing Director

ARCH VENTURE PARTNERS XII, L.P.

By: ARCH Venture Partners XII, LLC
its General Partner

By: _____*
Keith Crandell
Managing Director

ARCH VENTURE PARTNERS XII, LLC

By: _____*
Keith Crandell
Managing Director

_____*
Keith Crandell

_____*
Robert Nelsen

_____*
Kristina Burow

_____*
Steven Gillis

* By: /s/ Mark McDonnell
Mark McDonnell as
Attorney-in-Fact

* This Agreement of Joint Filing was executed by Mark McDonnell pursuant to a Power of Attorney filed as Exhibit 24.4 to the Form 3 relating to the beneficial ownership of shares of Neumora Therapeutics, Inc. by the Reporting Persons filed with the Securities Exchange Commission on September 14, 2023 and incorporated herein in its entirety by reference.