

PRIME MEDICINE, INC.

This free writing prospectus updates the preliminary prospectus dated October 13, 2022 included in Amendment No. 1 to the Registration Statement on Form S-1 (File No. 333-267579) relating to the initial public offering of the common stock of Prime Medicine, Inc. On October 17, 2022, the issuer filed Amendment No. 2 to the Registration Statement on Form S-1. This free writing prospectus updates the preliminary prospectus dated October 13, 2022 with information that is reflected in the preliminary prospectus dated October 17, 2022 included in Amendment No. 2 to the Registration Statement. Amendment No. 2 may be accessed through the following link:

<https://www.sec.gov/Archives/edgar/data/1894562/000162828022026491/primemedicines-1a2.htm>

This free writing prospectus reflects the following updates that were made in the preliminary prospectus:

Prospectus Summary and Business

The portfolio chart appearing on pages 6, 128 and 163 of Amendment No. 1 to the Registration Statement was updated to clarify that the sickle cell disease program is currently in the discovery stage.

Use of Proceeds

The words “for certain of our current therapeutic programs” were removed from the second bullet point in the Use of Proceeds discussion on page 86, such that the second bullet point on page 86 will read as follows (with a corresponding change on page 13):

- approximately \$65.0 million for IND-enabling studies and the potential initiation of clinical studies;

In addition, the following language was added as the third sentence in the last paragraph on page 86: “As a result, and due to the number of our programs currently in preclinical development, we currently are unable to specify to what stage of development the proceeds from this offering and our current cash, cash equivalents, and short-term investments will bring any particular program.”

Prime Medicine, Inc. has filed a registration statement (including a prospectus) with the Securities and Exchange Commission (the “SEC”) for the offering to which this communication relates. Before you invest, you are encouraged to read the prospectus in that registration statement and other documents the issuer has filed with the SEC for more complete information about the issuer and this offering. You may get these documents for free by visiting EDGAR on the SEC Website at www.sec.gov. Alternatively, copies of the preliminary prospectus related to the offering may be obtained from J.P. Morgan Securities LLC, c/o J.P. Morgan Securities LLC, Attention: Broadridge Financial Solutions, 1155 Long Island Avenue, Edgewood, NY 11717, or by telephone, at (866) 803-9204; Morgan Stanley & Co. LLC, Attention: Prospectus Department, 180 Varick Street, 2nd Floor, New York, New York 10014, by telephone at (866) 718-1649, or by email at prospectus@morganstanley.com; Goldman Sachs & Co. LLC, Attention: Prospectus Department, 200 West Street, New York, New York 10282, or by telephone at (866) 471-2526, or by email prospectus-ny@ny.email.gs.com; or Jefferies LLC, Attention: Prospectus Department, 520 Madison Avenue, New York, New York, 10022, or by telephone at (877) 821-7388, or by email at prospectus_department@jefferies.com.

This communication shall not constitute an offer to sell or the solicitation of an offer to buy, nor shall there be any sale of, these securities in any state or other jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of any such state or jurisdiction.