

PROSPECTUS SUPPLEMENT

(To Prospectus dated April 18, 2025 and Prospectus Supplement dated April 22, 2025)

Up to \$30,000,000



VOLITIONRX LIMITED
Common Stock

This prospectus supplement amends and supplements certain information in the prospectus supplement dated April 22, 2025 (the “ATM Prospectus Supplement”), and the accompanying base prospectus dated April 18, 2025 (together with the ATM Prospectus Supplement, the “Prospectus”), filed as part of our registration statement on Form S-3 (File No. 333-283088) (the “Registration Statement”). This prospectus supplement should be read in conjunction with the Prospectus, and is qualified by reference thereto, except to the extent the information herein amends or supersedes the information contained in the Prospectus. This prospectus supplement is not complete without, and may only be delivered or utilized in connection with, the Prospectus, and any future amendments or supplements thereto.

We previously entered into a Capital on Demand™ Sales Agreement, dated April 22, 2025 (the “Original Sales Agreement”), with JonesTrading Institutional Services LLC (“Jones”). On August 14, 2025, we entered into Amendment No. 1 to the Capital on Demand™ Sales Agreement (together with the Original Sales Agreement, the “Amended Sales Agreement”). In accordance with the terms of the Amended Sales Agreement and pursuant to this prospectus supplement, we may offer and sell up to an aggregate of up to \$30,000,000 of shares of our common stock, par value \$0.001 per share (“common stock”), from time to time through Jones acting as our agent or principal.

We initially registered for sale up to \$7,500,000 of shares of common stock pursuant to the Original Sales Agreement and ATM Prospectus Supplement. As of the date of this prospectus supplement, we have sold and issued an aggregate of 837,824 shares of common stock for an aggregate \$527,141.26 in gross proceeds through Jones under the Original Sales Agreement. This prospectus supplement amends the Prospectus to increase the maximum aggregate gross sales prices of common stock that may be offered, issued, and sold under the Amended Sales Agreement to up to \$30,000,000. Accordingly, we may sell up to \$30,000,000 of shares of common stock pursuant to this prospectus supplement and the accompanying Prospectus.

Our common stock is listed on the NYSE American market (the “NYSE American”), and traded under the symbol “VNRX.” On August 13, 2025, the last reported sale price of our common stock as reported on NYSE American was \$0.62 per share.

As of March 31, 2025, the date we filed our Annual Report on Form 10-K for the fiscal year ended December 31, 2024 (our “Annual Report”) with the Securities and Exchange Commission, the aggregate market value of our common stock held by non-affiliates pursuant to General Instruction I.B.6 of Form S-3, or our public float, was below \$75,000,000. However, as of June 20, 2025, the aggregate market value of our outstanding common stock held by non-affiliates calculated for purposes of General Instruction I.B.6 of Form S-3 was \$88,258,714, based on 103,982,020 shares of common stock outstanding as of that date, of which 95,933,385 shares were held by non-affiliates, and a price of \$0.92 per share, which was the last reported sale of common stock on the NYSE American on June 20, 2025. As a result, our public float increased above \$75,000,000, and we are no longer subject to the limitations contained in General Instruction I.B.6 of Form S-3 as of the date of this prospectus supplement. If we become subject to the offering limits of General Instruction I.B.6 of Form S-3 in the future, we will file another prospectus supplement.

INVESTING IN OUR COMMON STOCK INVOLVES A HIGH DEGREE OF RISK. YOU SHOULD REVIEW CAREFULLY THE RISKS AND UNCERTAINTIES DESCRIBED UNDER THE HEADING “RISK FACTORS” BEGINNING ON PAGE S-5 OF THE ATM PROSPECTUS SUPPLEMENT AND PAGE 10 OF OUR ANNUAL REPORT, AS WELL AS THE RISKS AND UNCERTAINTIES DESCRIBED IN THE OTHER DOCUMENTS WE FILE WITH THE SECURITIES AND EXCHANGE COMMISSION.

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



The date of this prospectus supplement is August 14, 2025