NRx Pharmaceuticals (NASDAQ:NRXP) Reports Second Quarter and Year to Date 2024 Financial Results and Provides Business Update

August 14, 2024

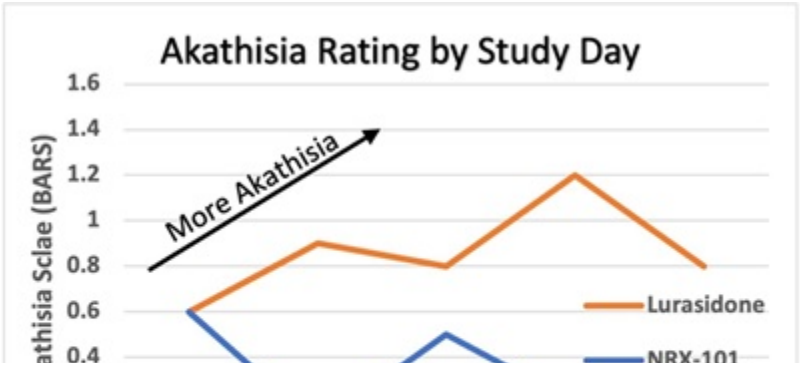
- ***Company is now funded for and focused on New Drug Applications (NDAs) for NRX-100 (ketamine) and NRX-101***
- **Audit of HOPE Therapeutics is now complete, SEC filing of spinout this quarter**

Key Milestones

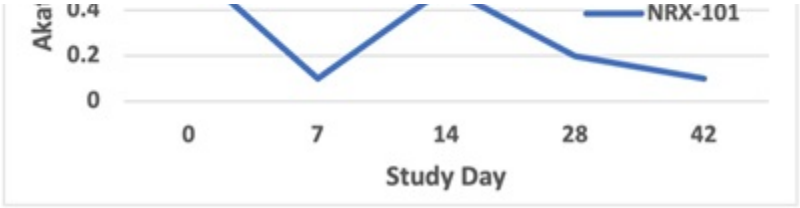
- Secured $10.8 - $16.3 million in convertible-debt funding from an institutional investor; funds targeted to support FDA New Drug Applications for NRX-100 (ketamine) and NRX-101. Replacement funding entails substantial reduction in interest rate, conversion discount, and other financial terms compared to prior debt
- Retirement of Streeterville debt and settlement of litigation at a substantial discount to litigation claims
- NRX-100 NDA for suicidal depression based on data from four clinical trials in nearly 1000 participants demonstrating highly significant efficacy compared to placebo, active comparator, and electroshock therapy
- Ketamine findings have just been confirmed in published 43,000 person cohort study[1]
- Phase 2b/3 trial of NRX-101 in suicidal patients with bipolar depression demonstrated depression efficacy comparable to standard of care and significant reduction of akathisia (P=0.025) and time to sustained remission from suicidality (P=.05). Presented at the annual meeting of the American Society of Clinical Psychopharmacology. Profile demonstrates possible best in class bipolar depression medication
- Company plans to file a New Drug Application (NDA) for Accelerated Approval under Breakthrough Therapy Designation and Priority Review of NRX-101 in treatment of bipolar depression in people akathisia or suicidality, based on the Phase 2b/3 and STABIL-B data
- Stability data continues to mature on the three manufacturing lots required for the NRX-100 (IV ketamine) NDA filing and the Company announced alignment with FDA on its Pediatric Study Plan for NRX-100, also a requirement for filing an NDA
- HOPE Therapeutics, the Company's wholly owned subsidiary, is focused on developing a best-in-class network of clinics that currently offer ketamine and other lifesaving therapies to patients with suicidal depression and related disorders. HOPE is planned to be spun out as a separate company to be owned by NRx, current NRx shareholders, and new investors. This effort will be funded apart from NRx.
- Appointed Dr. Dennis McBride, a Neuroscience, Information Technology and Medical Technology Veteran, to its Board of Directors
- Management to host a conference call August 14, 2024, at 4:30 PM ET

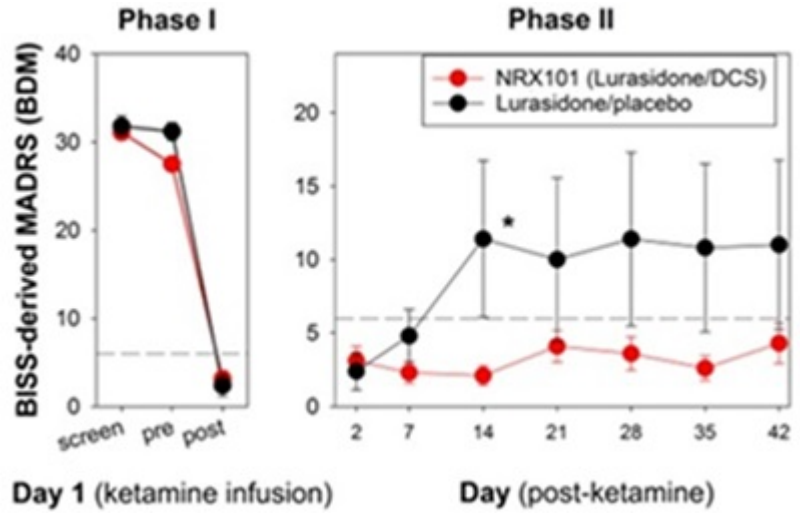
RADNOR, Pa., Aug. 14, 2024 /PRNewswire/ -- NRx Pharmaceuticals, Inc. (Nasdaq: NRXP) ("NRx Pharmaceuticals", the "Company"), a clinical-stage biopharmaceutical company, today announced its financial results for the quarter and year to date ended June 30, 2024, and provided a business update.

"NRx has continued to execute on our plans to file two NDA's this year. As we near maturation of NRX-100 stability data, we also achieved an important milestone in aligning with FDA on our pediatric study plan. Together with strong clinical data from four clinical trials, we believe this application will be quite robust. Additionally, the important data generated from two trials conducted by NRx with NRX-101 in suicidal bipolar depression sets the stage for a second NDA for Accelerated Approval later this year. Finally, work continues to spin out Hope Therapeutics and



distribute shares to NRx stockholders. We believe reaching these important milestones will generate significant value in the company and reward our shareholders," said Jonathan Javitt, MD, MPH, Chairman and Chief Scientist of NRx Pharmaceuticals. "Facilitated by funding to allow us to achieve these goals and while replacing the prior expensive and toxic debt on our balance sheet, we are in a position to deliver therapy that can meet considerable unmet medical need in millions of patients across the country. We are dedicated to bringing hope to life and I thank our team and shareholders for their ongoing hard work and support."





	Efficacy Measures: Repeated Measures Mixed Model LS Mean Differences							
	Through Day 28				Through Day 42			
	LOCF No		LOCF yes		LOCF No		LOCF yes	
MADRS Depression	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value
Score	-4.0	0.09	-7.7	0.03	-3.7	0.04	-7.7	0.04
Suicidality Rating	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value
Scale C-SSRS	-0.5	NS	-1.3	0.04	-0.6	NS	-1.5	0.02
Clinical Global	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value	LS Mean Δ	p-value
Impression CGI-SS	-0.4	NS	-2.9	0.05	-0.6	NS	-2.9	0.02

Second Quarter Clinical, Regulatory and Corporate Highlights

Funding for FDA filings of NRX-100 and NRX-101

The Company has executed a Convertible Debt instrument with Anson Funds of Toronto for $10.8 - $16.3 million in funding designed to retire existing debt and to support FDA New Drug filings of NRX-100 and NRX-101 in the fourth quarter of 2024. Terms have been disclosed in 8K filings but are at an interest rate and conversion rate substantially lower than current corporate indebtedness. The new funding has no provision for "extraordinary redemptions" triggered by appreciation in NRx share price.

Retirement of current debt and settlement of litigation

Concurrent with the Anson investment, the Company has settled its outstanding litigation with Streeterville Capital, LLC at a substantial discount to the amounts claimed in litigation.

Progress towards an NDA for NRX-100 (IV ketamine) in the treatment of suicidal depression

Intravenous ketamine has now become a standard of care for acute treatment of suicidal depression, in the absence of an FDA-labeled product. Intranasal Esketamine is approved by the FDA (SPRAVATO®) but has not demonstrated a benefit on suicidality and is not approved for use in patients with bipolar depression. Attempts to use intranasal racemic ketamine for suicidal depression have failed.

The Company has formed data-sharing partnerships to license clinical trial data from a French Government-funded trial and two NIH-funded trials all of which demonstrate efficacy of racemic Intravenous ketamine against depression and two of which demonstrate statistically significant benefit vs suicidality. The Company's role is to reformat these data into the required presentation required for review by the FDA.

In contrast to nasal ketamine, Intravenous racemic ketamine demonstrates dramatic and immediate reduction of suicidality in patients with both Major Depressive Disorder and Bipolar Depression. Grunebaum and colleagues demonstrated a rapid and statistically significant reduction in Suicidal Ideation (SSI) at day 1 (p=0.0003) and in depression (P=0.0234), as measured by the Profile of Mood States (POMS) among patients randomized to IV Ketamine compared to those randomized to midazolam. This trial was published in the American Journal of Psychiatry Grunebaum, et.al.[2]. Abbar and colleagues similarly published 84% remission from suicidality on the Columbia Suicide Severity Rating Scale (C-SSRS) in patients treated with ketamine, vs. 28% in those treated with placebo (P<.0001). This trial was published in the British Medical Journal[3]. Data are expected to be transmitted to FDA by in 2024.

In November 2023, the Company initiated manufacture of ketamine together with Nephron Pharmaceuticals, Inc. (West Columbia, SC) to develop a single patient presentation of ketamine. Nine months of real-time stability is ongoing, the minimum stability time required for a New Drug Application. This presentation of ketamine does not contain the preservative included in multi-dose vials, (Benzanthonium Chloride), that is designed to preserve sterility in the vial when multiple doses are drawn for multiple patients. The Company is not aware of any data to support the safety of this preservative for repeated IV administration. Data were collected 20 years ago that demonstrated the toxic effect of this class of preservatives when applied repeatedly to the surface of the eye, which led to the current generation of preservative-free eye drops. NRX-100 will therefore be launched as a preservative-free presentation.

A long-term challenge with ketamine is that the current formulation (KETALAR®) is highly acidic. While it is suitable for intravenous use, it cannot be administered subcutaneously. In March 2024 the Company demonstrated the formulation of a pH neutral patentable form of IV ketamine that it anticipates will have widespread applicability both in treatment of depression and chronic pain.

Development of NRX-101 for Suicidal Treatment-Resistant Suicidal Bipolar Depression

The Company presented final data from the recently completed phase 2b/3 trial of NRX-101 in suicidal bipolar depression[4] at the American Society of Clinical Psychopharmacology's annual meeting. These data demonstrated a significantly improved safety profile versus the standard of care, as demonstrated by a clinically significant reduction in akathisia (P=0.025) and time to sustained remission from suicidality (P=0.05). Akathisia is an adverse event seen with antidepressant medications considered by many experts to be a precursor to suicide. Given the vital need for safer medications in this at-risk population, we plan to submit an NDA for Accelerated Approval to the US FDA for treatment of bipolar depression patients with suicidality or akathisia, based on these data as well as additional data from our STABIL-B[5] trial.

Incorporation of HOPE Therapeutics

In February we first presented the contours of HOPE Therapeutics, a subsidiary that will focus on the delivery of advance psychiatric treatments, including ketamine-focused treatment for depression and suicidality. Unlike the core business of NRx Pharmaceuticals, that is focused on biotechnology Research and Development, HOPE is organized around consolidating existing best-in-class clinics into a nationwide network. This has been done previously and without much success with clinics that are not necessarily psychiatrist-led. As currently designed, the HOPE consolidation is likely to be funded as a separate entity, through bond offerings and, thus, to be non-dilutive to NRx shareholders. Over the past quarter, HOPE leadership has identified the clinics that are most likely to participate in the first $100 million consolidation, has completed the audit required for a public listing of HOPE shares, and has identified appropriate underwriters for a future bond offering.

With Hope ownership as an asset of NRx, this will further strengthen the NRx balance sheet and aims to further enhance NRx shareholder value.

NRX-101 for Treatment of Chronic Pain:

In 2023, the Company licensed US Patent 8,653,120 for the use of DCS in chronic pain and filed a now-accepted Investigational New Drug (IND) application with the FDA to initiate commercial drug development of NRX-101 in chronic pain. Data lock has now been achieved in a 200-person randomized prospective trial funded by the US DOD (NCT 03535688) in which patients with chronic pain were randomly assigned to DCS 400mg/day vs. placebo. Should these results support efficacy of DCS in the treatment of chronic low back pain, they are expected to provide a Breakthrough Therapy path towards treatment of chronic pain with DCS and DCS-containing medicines.

Treatment of Urinary Tract Infection (UTI) and Urosepsis:

Although treatment of UTI is quite different from use of NRX-101 to treat Central Nervous System disorders, D-cycloserine was originally developed as an antibiotic because of its role in disrupting the cell wall of certain pathogens. During Q3 2023, NRx tested NRX-101 and its components against resistant pathogens that appear on the Congressionally mandated Qualified Infectious Disease Product (QIDP) list and proved in vitro effectiveness against antibiotic-resistant *E. coli, Pseudomonas, and Acinetobacter.* Accordingly, NRx was granted QIDP designation, Fast Track Designation, and Priority Review by the US FDA in January 2024.

In recent years, increased antibiotic resistance to common pathogens that cause urinary tract infections and urosepsis (i.e., sepsis originating in the urinary tract) has resulted in a marked increase in cUTI, hospitalization, and death from urosepsis. The US Center for Disease Control and Prevention reports that more than 1.7 million Americans contract sepsis each year, of whom at least 350,000 die during their hospitalization or are discharged to hospice (CDC Sepsis Ref.)[6]. There are approximately 3 million patients per year who contract cUTI in the US annually (Lodise, et. al.)[7]. Additionally, should NRX-101 succeed in clinical trials, the Company will consider developing a follow-on product that is anticipated to achieve another 20 years of patent exclusivity.

A key challenge in the treatment of cUTI is the tendency of advanced antibiotics to cause *C. difficile* infection, which is fatal in 10% of those who contract it over the age of 65 and results in prolonged hospitalization in many more. The Company recently announced data demonstrating that NRX-101 does not compromise the intestinal microbiome, unlike common antibiotics including Clindamycin and Ciprofloxacin. Should these findings be documented in human patients, NRX-101 would represent the only treatment for cUTI that does not cause C. Difficile infection.

In The Company does not anticipate funding this initiative with core NRx assets and is exploring structures for partnership opportunities. Should the Company or its partners succeed in serving 10% of the cUTI market, the Company believes that the revenue from NRX-101 has the potential to be hundreds of million annually, based on 3 million cases per year in the US and potential pricing of over $3,500/course of therapy.

Financial Results for the Quarter and Year to Date 2024

For the three months ended June 30, 2024, we at NRx Pharmaceuticals reduced our net loss from $8.7 million in the second quarter of 2023 to $7.9 million in 2024, representing nearly a 10% improvement year over year. For that same period, we reduced

research and development expenses from $3.9 million in 2023 to $2.8 million in 2024. The $1.1 million decrease is related primarily to a decrease of $2.4 million in clinical trial and development expenses, offset by an increase of $1.3m related to the Alvogen warrants. Also in that 3 month period we recorded an increase in general and administrative expenses, from $4.1 million in 2023 to $4.2 million in 2024. The increase of $0.1 million is related primarily to an increase in consultants and legal fees partially offset by lower insurance expenses.

For the six months ended June 30, 2024, NRx Pharmaceuticals reduced its net loss to $14.4 million compared to $19.8 million in the prior year. These efficiencies represent an improvement in net loss of $5.4 million year over and a $1.32, or 47%, improvement in net loss per share year over year. Over that six-month period we recorded $4.6 million of research and development expenses compared to $7.5 million for the same period in 2023 representing a 39% decrease year over year. The decrease of $2.9 million is related primarily to a decrease of $4.1 million in clinical trial and development expenses, $0.3 million related to fees paid to regulatory and process development consultants while offset by $1.3 million related to the Alvogen warrants and $0.4 million related to fees paid to regulatory and development consultants. Also in that six-month period, we decreased G&A by $1.4 million, from $9.9 million in 2023 to $8.5 million in 2024, nearly a 15% decrease year over year.

As of June 30, 2024, we had $1.9 million in cash and cash equivalents. As previously stated, we recently announced we secured up to $16.3 Million Senior Secured Debt Financing from Anson Funds. This financing is expected to support 2024 filing of New Drug Applications for NRX-100 (ketamine) and NRX-101 and to support launch of HOPE Therapeutics as well as retire historical debt with more favorable terms, and a lower annual interest rate.

NRx continues to implement operational efficiencies to extend cash runway and maintain focus on our path to generating revenue and value for our shareholders.

Please see detailed financials on our Form 10-Q, filed with the SEC and available on our website.

Conference Call and Webcast Details

A live webcast of the conference call will be available on the Company's website at 4:30 p.m. ET today, at https://ir.nrxpharma.com/events. An archive of the webcast will be available on the Company's website for 30 days. Participants that are unable to join the webcast can access the conference call via telephone by dialing domestically 1-800-717-1738 or internationally 1-646-307-1865.

About NRx Pharmaceuticals, Inc.

NRx Pharmaceuticals is a clinical-stage biopharmaceutical company developing therapeutics based on its NMDA platform for the treatment of central nervous system disorders, specifically suicidal bipolar depression, chronic pain, and PTSD. The Company is developing NRX-101, an FDA-designated investigational Breakthrough Therapy for suicidal treatment-resistant bipolar depression and chronic pain. NRx plans to file an NDA for Accelerated Approval for NRX-101 in patients with bipolar depression and suicidality or akathisia. NRX-101 additionally has potential to act as a non-opioid treatment for chronic pain, as well as a treatment for complicated UTI.

NRx has recently announced plans to submit a New Drug Application for NRX-100 (IV ketamine) for the treatment of suicidal depression, based on results of well-controlled clinical trials conducted under the auspices of the US National Institutes of Health and newly obtained data from French health authorities, licensed under a data sharing agreement. NRx was awarded Fast Track Designation for development of ketamine (NRX-100) by the US FDA as part of a protocol to treat patients with acute suicidality.

About HOPE Therapeutics, Inc.

HOPE Therapeutics, Inc. (www.hopetherapeutics.com) is a care delivery company developing a best-in-class network of clinics that currently offer ketamine and other lifesaving therapies to patients with suicidal depression and related disorders, together with a digital therapeutic-enabled platform designed to augment and preserve the clinical benefit of NMDA-targeted drug therapy.

Notice Regarding Forward-Looking Statements

The information contained herein includes forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended. These statements include, among others, statements regarding the proposed public offering and the timing and the use of the proceeds from the offering. Forward-looking statements generally include statements that are predictive in nature and depend upon or refer to future events or conditions, and include words such as "may," "will," "should," "would," "expect," "plan," "believe," "intend," "look forward," and other similar expressions among others. These statements relate to future events or to the Company's future financial performance, and involve known and unknown risks, uncertainties and other factors that may cause the Company's actual results to be materially different from any future results, levels of activity, performance or achievements expressed or implied by these forward-looking statements. You should not place undue reliance on forward-looking statements since they involve known and unknown risks, uncertainties and other factors which are, in some cases, beyond the Company's control and which could, and likely will, materially affect actual results, levels of activity, performance or achievements. Any forward-looking statement reflects the Company's current views with respect to future events and is subject to these and other risks, uncertainties and assumptions relating to the Company's operations, results of operations, growth strategy and liquidity. More detailed information about the Company and the risk factors that may affect the realization of forward-looking statements is set forth in the Company's most

recent Annual Report on Form 10-K and other filings with the Securities and Exchange Commission. Investors and security holders are urged to read these documents free of charge on the SEC's website at http://www.sec.gov. Except as may be required by applicable law, The Company assumes no obligation to publicly update or revise these forward-looking statements for any reason, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, whether as a result of new information, future events or otherwise.

[1] Pan, Y., Gorenflo, M.P., Davis, P.B. *et al.* Suicidal ideation following ketamine prescription in patients with recurrent major depressive disorder: a nation-wide cohort study. *Transl Psychiatry* **14**, 327 (2024). https://doi.org/10.1038/s41398-024-03033-4

[2] Grunebaum, et. al., Ketamine for Rapid Reduction of Suicidal Thoughts. Am J Psychiatry. 2018 Apr 1: 175(4): 327-335

[3] Abbar, et. al. Ketamine for Acute Treatment of Severe Suicidal Ideation, BMJ 2022; 376

[4] Nierenberg, et. al., A Randomized, Double-Blind Controlled Comparison of NRX-101 (D-cycloserine/ lurasidone) to Lurasidone for Adults with Bipolar Depression and Subacute Suicidal Ideation or Behavior. Am Soc Clin Psych Annual Meeting 2024.

[5] Nierenberg et al. International Journal of Bipolar Disorders (2023) 11:28 https://doi.org/10.1186/s40345-023-00

[6] https://www.cdc.gov/sepsis/what-is-sepsis.html

[7] Open Forum Infectious Diseases, Volume 9, Issue 7, July 2022, ofac315, https://doi.org/10.1093/ofid/ofac315

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