



NRx Defense Systems, an NRx Company (Nasdaq:NRXP) Awarded \$11 Million Dollar DARPA Prime Contract to Evaluate Robotic Magnetic Stimulation in conjunction with NRX-101 for Treatment of Resistant Depression

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- DARPA states that the program, if successful, will fundamentally change the Standard of Care for Treatment Resistant Depression. The Military has recognized that current treatments for depression are not deployable in operational military settings.
- The SPARC-TMS Single Day treatment protocol, which involves the use of Robotic Neuronavigated Transcranial Magnetic Stimulation (TMS) augmented by NRx's neuroplastic investigational drug NRX-101, is based on a recently completed randomized-controlled trial funded by DARPA and published real world findings of 91% treatment response and 69% remission at 3 months post treatment with traditional TMS + D-cycloserine (an active ingredient of NRX-101).
- If the above results are replicated in the SPARC-TMS trial, it has the potential to serve as an FDA registration study for approval of NRX-101 in conjunction with TMS for people with Treatment Resistant Depression
- NRx Defense Systems is partnered with HOPE Therapeutics (an NRx sister company), Harvard Medical School's McLean Hospital, Arizona State University, Zeta Surgical Systems, and Neurocare of America.
- Plans are underway to expand the SPARC-TMS trial to leading military hospitals.
- NRx Defense systems is led by a team of former senior military officers and former employees of the Office of the Secretary of Defense with advanced degrees in medicine, psychology, and data science.

MIAMI, Sept. 30, 2026 (GLOBE NEWSWIRE) -- NRx Defense Systems, ("NRx Defense", "NRXD" or "Company" an NRx Pharmaceuticals, Inc. (Nasdaq: NRXP) subsidiary company, today announced the award of an initial \$11,177,757.27 contract issued by the Defense Advanced Research Projects Agency, a Branch of the United States Department of War. The underlying clinical trial, the Synaptic Plasticity Augmented Rapid Circuit Stimulation (SPARC-TMS) trial has been approved by the US Food and Drug Administration (www.clinicaltrials.gov NCT07227103) and will now begin enrolling patients.

The SPARC-TMS trial will be conducted at Harvard Medical School's McLean Hospital, Arizona State University, and HOPE Therapeutics. Several leading military hospitals will also be affiliated with the study.

The focus of SPARC-TMS is to test whether an entire course of TMS delivered in a single day can effectively treat major depressive disorder when combined with mechanism-guided pharmacologic augmentation with NRX-101. TMS is thought to exert its therapeutic effects primarily through synaptic plasticity – the cellular basis of learning and memory. Synaptic plasticity is mediated by NMDA receptors. NRX-101 combines two drugs that may enhance NMDA receptor function through complementary mechanisms: d-cycloserine, an NMDA receptor partial agonist, and lurasidone, which has been shown to increase NMDA receptor expression through 5-HT7 antagonism. The treatment to be tested requires a single day in an outpatient clinic, involves no psychedelic experience or intense supervision, no anesthesia, and can be delivered by a robotic targeting system originally developed for neurosurgery with precision of 1mm or less. The preamble to the DARPA contract states that,

Current treatments for Treatment Resistant Depression ... require weeks of daily outpatient treatment, have modest response rates of 30%-50%, and are not easily deployable in military operational settings... The "nearly universally accessible" nature of a validated one-day TMS treatment suggests a large potential for adoption, aiming to change the standard of care.

NRX-101, the investigational drug to be tested in this trial was originally conceived by NRx Pharmaceuticals as a Breakthrough therapy drug for treatment of suicidal bipolar depression and so far has demonstrated a reduction in both suicidality and akathisia compared to lurasidone a standard of care drug approved by the FDA in bipolar depression. The SPARC-TMS trial has the potential to serve as an FDA registration study for the use of NRX-101 in conjunction with TMS for people with Treatment Resistant Depression. a far larger population of patients, estimated at 8.9 million American adults with an estimated \$44 Billion burden of illness.¹

Military personnel, veterans, and first responders are known to have substantially elevated rates of depression and suicidality, compared to civilians, an issue that has been addressed by the President of the United States, multiple cabinet-level officials, and numerous public service organizations.

The SPARC-TMS project is based on multiple years of research led by NRXD's Chief Medical Innovation Officer, Prof. Joshua Brown, MD, PhD, who has pioneered the understanding of the interplay between small molecule drugs for improving

neuroplasticity and TMS. Prof. Daniel Javitt, NRx's co-founder originally reported the role of the NMDA receptor in psychiatric disease in 1987.

NRx Defense Systems was founded as a subsidiary of NRx Pharmaceuticals by Prof. Jonathan Javitt, MD, MPH, CEO and founder of NRXP, Prof. Joshua Brown, MD, PhD, and Dr. Dennis McBride, PhD, (CAPT Medical Service Corps US Navy, Retired, former Senior Executive Leader National Defense University and Office of the Secretary of Defense). Dr. McBride served multiple tours of duty, including scientific leadership roles at six military laboratories and as the first behavioral neuroscientist to be named a DARPA program manager during his highly-decorated Navy career. Their team is augmented by Dr. Martin Goodwin, PhD, a psychologist and data scientist who has just completed a decorated tour of duty as District Commodore for the US Coast Guard Auxiliary.

"I am delighted to unite with my former colleagues at DARPA to reinvent the paradigm for treating depression and suicidality for all Americans," said Dr. McBride, "During my time at DARPA we advanced cognitive-based artificial intelligence with the ambition to use advanced computational techniques to solve humanity's greatest challenges. It is inspiring to be part of this AI-empowered mission because it will save countless lives."

"The chance to see fundamental research mature from my laboratory to a technology that has the potential to save lives and end suffering is the dream of any physician scientist," said Dr. Brown, "while success is far from guaranteed in any clinical trial, DARPA has a long track record of supporting pioneering efforts with far-reaching impact, and their support gives us the strongest possible foundation for success."

About NRx Defense Systems

NRx Defense Systems (NRXD) is a newly-formed US subsidiary established by NRx Pharmaceuticals, Inc. (Nasdaq:NRXP) to serve as a fully-qualified defense contractor focused on treating causes of death and disability in military personnel, veterans, and first responders. NRXD maintains military grade cybersecurity and personnel security clearances suitable for operating within military and first responder environments. The company is led by medical professionals and scientists who are able to understand disease processes at a molecular and data science level and translate that understanding into technologies that can be deployed rapidly, efficiently, and at scale.

About NRx Pharmaceuticals, Inc.

NRx Pharmaceuticals, Inc. (www.nrxpharma.com), is a clinical-stage biopharmaceutical company developing therapeutics based on its NMDA platform for the treatment of central nervous system disorders, specifically suicidal depression, chronic pain, and PTSD. The Company is developing NRX-100 (preservative-free intravenous ketamine) and NRX-101, (oral D-cycloserine/lurasidone). NRX-100 has been awarded Fast Track Designation for the treatment of Suicidal ideation in Depression, including Bipolar Depression. NRX-101 has been awarded Breakthrough Therapy Designation for the treatment of suicidal bipolar depression. NRx has filed an Abbreviated New Drug Application (ANDA), and initiated a New Drug Application filing for NRX-100 with an application for the Commissioner's National Priority Voucher Program for the treatment of suicidal ideation in patients with depression, including bipolar depression.

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. 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. The Company has reported regulatory milestones as they have been achieved but has not predicted the outcome of any future regulatory determination. 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, including uncertainties and assumptions relating to the Company's operations, results of operations, growth strategy, and, among other things, liquidity. More detailed information about the Company and the risk factors that may affect the realization of forward-looking statements is set forth in NRx Pharmaceuticals, Inc.'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.

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¹ Zhdanova M, Pilon D, Ghelerter I, et al. The prevalence and national burden of treatment-resistant depression and major depressive disorder in the United States. *J Clin Psychiatry*. 2021;82(2):20m13699.