

Arsenal Medical's Foam Technology for Battlefield Injuries Receives \$15.5 Million Phase II DARPA Contract

Novel Arsenal foam technology to stabilize soldiers with severe abdominal hemorrhage, addressing major source of battlefield mortality

Watertown, Mass., December 10, 2012 – Arsenal Medical, Inc. (Arsenal) today announced that it has been awarded a Phase II contract from the Defense Advanced Research Projects Agency (DARPA) to support continued development of its novel product to control intra-abdominal hemorrhage in soldiers injured on the battlefield. This Phase II award, for \$15.5M, has resulted from Arsenal's successful pre-clinical proof-of-concept work in Phase I of the project and is intended to support both late-stage development and regulatory submission. The Phase II award brings the total amount of money that Arsenal has received from DARPA for this program to \$22.5M.

Today, a large percentage of preventable battlefield deaths are caused by internal abdominal injuries and associated internal bleeding that cannot be stopped by external compression. Experts have estimated that a substantial fraction of these deaths could be avoided if the soldier could be stabilized for the one to three hours needed to reach a field hospital. Arsenal's in situ, foam-based product is designed to be administered on the battlefield by a combat medic, and to control hemorrhage in the intact abdominal cavity for at least one hour.

Pre-clinical data was presented at the 2012 Annual Meeting of the American Association for the Surgery of Trauma in Kauai, Hawaii, by senior author David King, MD, a trauma surgeon at Massachusetts General Hospital with significant combat theater experience. These data demonstrated the ability of the foam to treat severe hemorrhage for up to three hours in a lethal model of liver injury. Minimally-invasive application of the product reduced blood loss six-fold and increased survival at three hours post-injury to 72% from the 8% observed in controls.

"Currently, there are no effective pre-hospital treatments available for intra-abdominal bleeding on the battlefield," said Dr. King. "Our ultimate goal is to find innovative ways to improve treatment and save lives of those who are serving their country, as well as those who experience serious injury through trauma."

While the DARPA-funded program is focused on improving outcomes for injured soldiers, the Arsenal team also expects to develop its novel foam technology platform for civilian use in severe trauma, where it also could dramatically improve patient care. The foam's novel properties may also lead to important products in other complex clinical situations involving internal hemorrhage and repair.

"The team of engineers and scientists at Arsenal Medical is excited to be working on one of the most difficult challenges in battlefield medicine," said James Barry, PhD, Executive Vice President and Chief Operating Officer of Arsenal. "There can be no more important goal for all of us who work in healthcare than to save lives. And working to help save the lives of our soldiers is exceptionally motivating."

About Arsenal Medical

Arsenal Medical uses conventional biomaterials in unconventional ways to develop novel products that improve local therapy for injury and disease. The company is advancing multiple preclinical programs based on both its two proprietary technology platforms: its therapeutic foam and AxioCore, a novel, high-throughput nanofiber technology. Arsenal Medical is supported by venture funding, as well as grants from the Department of Defense, National Institute of Standards and Technology's Technology Innovation Program (NIST-TIP) and the Bill & Melinda Gates Foundation. Its investors include Polaris Venture Partners, North Bridge Venture Partners and Intersouth Partners.