

Miniature 3D-printed ventilator that NIH Called a “Game Changer” to be Presented at American Heart Association meeting

Presentation to focus on mini resuscitator for emergency breathing in EMS, disasters, pandemics, military readiness

PHILADELPHIA, PA, USA, November 10, 2023 /EINPresswire.com/ -- [fluidIQ](#), a startup MedTech company developing fluidics-based respiratory solutions, announced today its technology, a 3D-printed miniature resuscitator, will be presented at the American Heart Association (AHA) meeting in Philadelphia, PA.



The current standard of care for emergency breathing support, including in cardiopulmonary resuscitation (CPR), is a 70-year-old manual technology called a bag-valve mask (BVM) that has changed very little in that time. It is well-recognized that manual resuscitation is time and labor intensive and commonly inadvertently causes harm to the lungs of patients it is intended to help.

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*Matt Vogelhuber, R. Ph., CEO
of fluidIQ*

fluidIQ's HOPE inVent, a 3D-printed resuscitator that is just three inches tall and one inch wide, will be presented in a project by researchers from the U.S. and Brazil that assessed the device's performance in a resuscitation model. Specifically, the research evaluated the resuscitator's ability to adequately ventilate with different lung compliance levels commonly seen in post-

(cardiac)arrest adults. Lung compliance is a measure of the lungs' ability to stretch during breathing.

“This miniature device was designed to be transformative in emergency breathing support and an ideal tool for emergency resuscitation scenarios. We are honored HOPE inVent will be presented at the AHA meeting,” said Matt Vogelhuber, R. Ph., CEO of fluidIQ.

fluidIQ's technology team addressed the limitations of manual breathing techniques as well as limitations of conventional ventilators that are impractical in many kinds of emergencies because of size, weight and reliance on batteries and electricity. The device that resulted is the company's lead technology, HOPE inVent, that was created to provide resuscitation and emergency breathing without the need for electricity or batteries. The device harnesses the science of fluidics to provide breathing support to people struggling to breathe or who are unable to breathe on their own and uses air or fluids to operate things automatically.

When the fluidIQ research team first met their research collaborators in Brazil, it was in the middle of the worldwide pandemic on a Zoom call. fluidIQ's Chief of Clinical R&D, Brian Walsh PhD, RRT, FAARC, and Chief Technology Officer, Artemio Mendoza, went on to join with Brazilian researchers for a translational study. Now, more than three years later, the results of that initial work will be presented at the largest heart meeting in the world.



HOPE inVent(tm) on left compared to makeup tube on right to show size



Matt Vogelhuber, R.Ph., CEO of fluidIQ

Within the early days of the company's formation, fluidIQ was connected to the Brazilian

researchers who were searching for a novel breathing solution that could work in remote and austere environments including rain forests. Later, fluidIQ's scientists worked with the team to develop a protocol and study design to demonstrate the benefits of the miniature ventilator, that they believed would solve some of the problems associated with emergency response and transport of patients. They also expected it would serve as a model in other parts of the world and provide support in emergency settings including in natural disasters, pandemics, mass casualties, military combat situations and in war-torn areas, and could be used for stockpiling, preparedness and readiness.

In October of 2022, the National Institutes of Health, published their initial research on the technology in Science Translational Medicine (<https://www.science.org/stoken/author-tokens/ST-800/full>) and the NIH Director published a blog describing the tiny resuscitator as a "game changer". Published in November 2022, the blog read "The possibilities of this 3D-printed miniature ventilator are broad. The ventilators could be easily used in emergency transport, potentially treating battlefield casualties or responding to disasters and mass casualty events like earthquakes...Perhaps in the not-too-distant future, a device designed to help people breathe could fit into your pocket next to your phone and keys." The full blog can be found at: <https://directorsblog.nih.gov/2022/11/29/clinical-center-doctors-testing-3d-printed-miniature-ventilator/>

About fluidIQ™

fluidIQ, a public benefit and Delaware corporation, provides simple yet elegant solutions based on proprietary fluidics technology. The company was founded by a group of doctors, engineers and patient advocates who joined together to find solutions for gaps in medical needs, including ventilators, in the midst of the coronavirus-caused world crisis. fluidIQ aims to deliver hope to a world in need with simple, easy-to-deploy technology solutions that solve the most pressing medical challenges of our time. fluidIQ's roadmap for an entire family of products is based on fluidics-operated devices dedicated to filling gaps in emergency and preparedness protocols that are user-friendly, scalable and cost-effective. The science of fluidics uses air or fluids to operate things automatically without the need for electricity or batteries. In 2021, Fast Company named inVent a "World Changing Idea" and in 2023, fluidIQ was bestowed an Innovation award by Medical Technology Enterprise Consortium (MTEC). Visit www.fluidIQ.org to learn more.

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