'Cholera detection lab' smartphone-enabled platform to be beta tested by worldwide leading hospital in cholera research

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OmniVis, a Purdue University-affiliated startup is working with the International Centre for Diarrhoeal Disease Research, Bangladesh on a smartphone platform-enabled platform targeting cholera. Here, a researcher is discussing the device's usability in the field with an expert researcher. Credit: Purdue University

One of the world's leading cholera research hospitals has teamed with a Purdue University-affiliated startup with a goal to stop the spread of cholera, one of the most preventable and treatable diseases on Earth.

Cholera sickens more than 3 million people every year and kills more than 95,000, according to the World Health Organization.

A "cholera detection lab" smartphone-enabled platform was developed at Purdue and is being commercialized through OmniVis, co-founded by Purdue College of Engineering alumna Katherine Clayton and three professors. OmniVis teamed up in May with the International Centre for Diarrhoeal Disease Research, Bangladesh—an international health research organization and hospital—to test the technology in a beta study.

The Purdue University-patented technology reduces the detection time of cholera from three to five days to about 30 minutes, enabling faster treatment and containment of the disease.

"This was such an incredible opportunity for us and an acknowledgement of the research being done by Purdue with cholera," Clayton said. "This organization in Bangladesh has been responsible for groundbreaking research over the decades that has really transformed the world's understanding and treatment of cholera."

OmniVis has been learning about current water collection procedures in Dhaka from International Centre for Diarrhoeal Disease Research, Bangladesh staff. Credit: Purdue University

Clayton said the OmniVis team will take what was learned about the device—including its functions and user design—to continue developing the technology. The technology uses a hardware device and disposable test kit to collect and analyze water samples.

Other members of the OmniVis team include Drs. Tamara Kinzer-Ursem and Jacqueline Linnes, Marta E. Gross assistant professors in the Weldon School of Biomedical Engineering at Purdue; Dr. Steven Wereley, a professor in the School of Mechanical Engineering at Purdue; and Lynne Cheng, who serves as their head of operations. A group of master's degree students from the Eck Institute for Global Health at the University of Notre Dame helped lead the beta test in Bangladesh.

The technology is being patented through the Purdue Research Foundation Office of Technology Commercialization, and OmniVis is looking for on-the-ground organizations as partners interested in co-testing the device in their geographical region. OmniVis has worked also with the Purdue Foundry, a commercialization accelerator in Purdue's Burton D. Morgan Center for Entrepreneurship.

"The Purdue Research Foundation and the Foundry are really good about pushing innovators and entrepreneurs to take their ideas and technologies into the world, and this an example of our own giant leap," Clayton said.

The work aligns with Purdue's Giant Leaps celebration of the university's global advancements in health as part of Purdue's 150th

anniversary. This is one of the four themes of the yearlong celebration's Ideas Festival, designed to showcase Purdue as an intellectual center solving real-world issues.

Provided by Purdue University

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