Delivering health care through a new lens: Smart glasses

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Vuzix M400 smart glasses

The COVID-19 pandemic has led to the expansion of telemedicine, and

as part of that expansion, faculty at the University of Louisville are piloting new smart glasses for advanced delivery of health care.

"There is both an urgent and widespread need to not only treat patients but deliver expertise and training remotely and safely to both professionals and medical learners," said R. Brent Wright, MD, associate dean for rural health innovation at the UofL School of Medicine, who has been working with various companies to explore a smart glasses solution for telemedicine since 2014.

Long-term care facilities and emergency departments represent two of the areas with greatest need for the glasses for direct physician care during the pandemic. The UofL Trager Institute, emergency medicine and psychiatry are part of a feasibility study to test the Vuzix M400 smart glasses.

"It is imperative that we find solutions for health care to continue for the vulnerable nursing home population in Kentucky," said Anna Faul, Ph.D., executive director and professor, UofL Trager Institute. "The use of smart glasses to provide real-time, expert geriatric care to residents of long-term care facilities is a huge step in increasing access to care, particularly during COVID-19. Each nursing home in our study will receive smart glasses that will allow for remote video consults with specialized medical providers and behavioral health experts without the need for the providers to enter the facilities and expose themselves and other patients to COVID-19."

The concept is fairly straightforward. An advanced practice nurse practitioner or other health care professional working at a LTC facility will put on the web-connected glasses and dial-in with an attending physician through the Zoom conference platform. A camera and microphone are attached to the glasses, and the technology has the potential to display and obtain information for the physician to access

remotely. The physician can see and interact directly with the LTC resident, providing immediate consultation and evaluation.

R. Brent Wright, M.D., wearing smart glasses Credit: UofL

The glasses allow for ease of mobility and hands-free interaction for the on-site provider, an advantage over current standard telehealth delivery which requires computers and monitors to be transported from bed-to-bed on large carts. Additionally, data can be input into medical records hands-free, and can be controlled by voice-commands.

Smart glasses will support health care workers at five LTC facilities and one emergency department in Kentucky. UofL researchers will conduct a brief feasibility study related to the use of these six pairs of smart glasses. If the data is promising, the study will be extended. Once the pandemic has subsided, researchers hope to investigate the utility of usage for medical education.

"This technology holds great promise. UofL faculty are exploring how to transform health care and this is part of an innovative solution as we provide care and educate the next generation of physicians," said Toni Ganzel, MD, dean of the UofL School of Medicine, and vice president for academic medical affairs.

"The pandemic has served as the catalyst for changing delivery of care. When you have to do things so rapidly and emergently, there is a call to be creative and innovative. Telemedicine allows us to share expertise while keeping a safe distance, and the smart glasses are very high-fidelity.

"The timing had to be right for this technology to become more accepted," Wright said. "It will be big part of health care moving forward, even after this swell with the COVID-19 pandemic, and it will be exciting to see some of our current medical residents incorporate telemedicine into their future practices."

Provided by University of Louisville