Medical Xpress

Study looks at Google Glass to bring toxicology specialists to remote emergency rooms

August 7 2015

Researchers at the University of Massachusetts Medical School have found that Google Glass, a head-mounted streaming audio/video device, may be used to effectively extend bed-side toxicology consults to distant health care facilities such as community and rural hospitals to diagnose and manage poisoned patients. Published in the *Journal of Medical Toxicology*, the study also showed preliminary data that suggests the hands-free device helps physicians in diagnosing specific poisonings and can enhance patient care.

"In the present era of value-based care, a toxicology service using hands-free devices, such as Google Glass, could conceivably expand its coverage area and enhance patient care, while potentially decreasing overall treatment costs," said Peter R. Chai, MD, toxicology fellow at UMass Medical School. "Our work shows that the data transmitted by Google Glass can be used to supplement traditional telephone consults, validate bedside physical exams, and diagnose and manage patients."

Traditional telemedicine devices usually consist of large desktop or laptop computers affixed to a big cart that has to be rolled from exam room to exam room. This limits both access and functionality in a busy emergency room setting.

"Glass is positioned perfectly as an emergency medicine telemedical device. Its small, hands free and portable, so you can bring it right to the

bedside and have a real-time specialist with you when you need one," said Dr. Chai.

Advances in wireless infrastructure, the miniaturization of hardware and the advent of wearable devices such as Google Glass allow a new generation of technologies that can assist physicians and improve health care delivery to be deployed in clinical settings. Through the device, physicians can stream video of an exam, take and enlarge photos and consult with remote specialists.

In the study, emergency medicine residents at UMass Memorial Medical Center performed 18 toxicology consults with Google Glass. ER physicians wearing Google Glass evaluated the patients at bedside while a secure video feed was sent to the toxicology supervising consultant. The supervising consultant then guided the resident through text messages displayed on the Glass. Consultants also obtained static photos of medication bottles, electrocardiograms (EKG) and other pertinent information at the discretion of the supervisor. This was done in addition to the standard verbal consult available to residents.

As a result of using Google Glass, consulting toxicologists reported being more confident in diagnosing specific toxidromes. Additional data collected showed that the use of Google Glass also changed management of patient care in more than half of the cases seen. Specifically, six of those patients received antidotes they otherwise would not have. Overall, 89 percent of the cases seen with Glass were considered successful by the consulting toxicologist.

"Placing an expert at the virtual bedside of the patient has huge advantages," said Chai. "It brings a specialist to patients that might not otherwise have access to that kind of expertise. Because Google Glass is relatively unobtrusive to patients, can be operated hands free and is extremely portable, it has a distinct advantage over traditional

telemedicine platforms."

Having shown that Google Glass is a feasible option for toxicology consults in the emergency room setting, Chai said the next step will be to determine the role Google Glass can play in the remote care of poisoned patients.

To safeguard patient information, each device was equipped with a third-party HIPPA-complaint platform called Pristine Eyesight. Information passing through Google Glass was encrypted for security and privacy.

Provided by University of Massachusetts Medical School

Citation: Study looks at Google Glass to bring toxicology specialists to remote emergency rooms (2015, August 7) retrieved 6 May 2024 from https://medicalxpress.com/news/2015-08-google-glass-toxicology-specialists-remote.html