

# Smartphone technology acceptable for telemedicine

October 1 2012

---

A new Mayo Clinic study confirms the use of smartphones medical images to evaluate stroke patients in remote locations through telemedicine. The study, the first to test the effectiveness of smartphone teleradiology applications in a real-world telestroke network, was recently published in *Stroke*, a journal of the American Heart Association.

"Essentially what this means is that telemedicine can fit in our pockets," says Bart Demaerschalk, M.D., professor of Neurology, and medical director of Mayo Clinic Telestroke. "For patients this means access to expertise in a timely fashion when they need it most, no matter what emergency room they may find themselves."

Mayo Clinic was the first medical center in Arizona to do pioneering clinical research to study telemedicine to serve patients with [stroke](#) in non-urban settings. Today, Mayo Clinic is the hub in a network of 12 other spoke centers, all but one in Arizona. In telestroke care, the use of telemedicine platforms or robots located in a rural hospital lets a stroke patient be seen in real time by a neurology specialist who typically is working from a desktop or [laptop computer](#) in Phoenix. The Mayo Clinic stroke neurologist, whose face appears on a computer screen, consults with emergency room physicians at the rural sites and evaluates the patient.

Patients showing signs of stroke can be examined by the neurologist who can also view scans of the patient's brain to detect possible damage from

a hemorrhage or blocked artery. If necessary patients can be administered clot-busting medications within the narrow window of time necessary to minimize permanent injury to the brain. The study compared the quality of [medical images](#) using a particular smartphone application to the same types of information and images typically viewed via desktop computers. Mayo Clinic [neurologists](#) worked with emergency physicians and [radiologists](#) at Yuma Regional Medical Center to compare brain scan images from 53 patients who came to that medical center with stroke.

The scans were reviewed by radiologists in Yuma and a separate adjudication panel of stroke neurologists to determine the level of agreement between these traditional interpretation routes and new images and scans on smartphones interpreted by telestroke doctors. The study shows there was a high level of agreement (92 to 100 percent) among all the reviewers over the most important radiological features.

"Smartphones are ubiquitous, they are everywhere," Dr. Demaerschalk says. "If we can transmit health information securely and simultaneously use the video conferencing capabilities for clinical assessments, we can have telemedicine anywhere, which is essential in a state like Arizona where more than 40 percent of the population doesn't have access to immediate neurologic care."

The study was funded by the Arizona Department of Health Services and the technology and technical assistance was provided by Calgary Scientific, the maker of ResolutionMD.

The Mayo Clinic Telestroke Network includes hospitals in Kingman, Flagstaff, Parker, Cottonwood, Show Low, Globe, Yuma, Bisbee, Casa Grande, Tuba City and Phoenix, all in Arizona; and a hospital in St. Joseph, Mo. To date, more than 1,000 emergency consultations have taken place for stroke between Mayo Clinic stroke neurologists and

physicians at the spoke centers. Such comprehensive evaluation techniques lead to appropriate life-saving treatment for stroke, and have resulted in significant cost reductions by not requiring ground or air ambulance transfer of the patient to another medical center.

Provided by Mayo Clinic

Citation: Smartphone technology acceptable for telemedicine (2012, October 1) retrieved 19 April 2024 from

<https://medicalxpress.com/news/2012-10-smartphone-technology-telemedicine.html>

This document is subject to copyright. Apart from any fair dealing for the purpose of private study or research, no part may be reproduced without the written permission. The content is provided for information purposes only.