

Digital strategies show promise for emergency heart and stroke care

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Mobile devices, social media, visual media and crowdsourcing have the potential to improve emergency care for cardiac arrests, heart attacks and strokes, according to a new scientific statement from the American Heart Association.

The new statement, published in the American Heart Association journal *Circulation*, reviewed scientific studies to evaluate current knowledge on the effectiveness digital strategies at improving emergency cardiac and stroke care.

"When seconds count, early recognition of the symptoms of cardiac arrest, heart attack or stroke and quick action can make a huge difference in whether someone lives or dies or has serious complications afterwards," said Raina Merchant, M.D., M.S.H.P., director of the Social Media Lab at the Penn Medicine Center for Health Care Innovation in Philadelphia, Pennsylvania, and co-author of the new scientific statement. "Digital platforms can support existing efforts to educate people about what to do in an emergency. Learning what to do - including how to perform CPR and recognizing the symptoms of stroke - is something many people can do that can save lives."

Some studies on digital strategies have shown positive results, such as a Swedish study that used a mobile phone application to alert volunteers within 500 meters of a [cardiac arrest](#) victim to respond and start CPR. It found that 62 percent of the volunteers with the app started CPR, while only 48 percent of bystanders without the app started CPR.

A Japanese study found that when emergency department personnel sent pictures of 12-lead ECGs via their smartphone to interventional cardiologists for interpretation, the smartphone method shaved 1.5 minutes off the time clinicians needed to diagnose a patient, compared to sending the images via fax.

Smartphone apps to view brain images for stroke and Face Time videoconferencing apps to assess stroke patients by a remote neurologist may also be feasible.

However, the statement authors emphasize that, while the potential for applying these tools to improve care is compelling, they require evidence of their effectiveness.

While no research to date has shown negative results of using digital tools for emergency cardiac or stroke care, the authors raise the issue of unintended consequences to patients due to inaccurate information being provided via digital tools, which could lead to medical errors and higher costs, and the risk of disclosing patients' health information in violation of federal privacy law.

"As many of these interventions are new and emerging, it is an optimal time to conduct rigorous evaluations just as are done for traditional medical therapies and interventions," Merchant said.

Some unanswered questions that should be the focus of future studies include:

- Can mobile devices be converted into defibrillators?
- Can video sharing platforms help real-time bystander CPR and automated external defibrillator (AED) coaching?
- Can emergency personnel use cell phones to pinpoint the best hospital for treatment based on the patient, traffic, hospital

readiness and average treatment times?

Provided by American Heart Association

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