

Why doctors' pagers still trump smartphones

By Brian Dolan

*More than 80 percent of physicians in the US now have smartphones. About a third have tablets. Despite the aggressive adoption rates of these devices many physicians still carry pagers. Yes, plenty of healthcare-specific messaging services are now available for physicians with smartphones, and we cover the launch of these services at MobiHealthNews. Is it really time to move away from the pager? **Ted McNaught, President of Critical Alert Systems**, the third largest paging carrier in the United States, argues that smartphones aren't up to snuff when it comes to critical messaging. I invited McNaught to make the case for pagers despite the rise of smartphones in healthcare settings — here's his take:*



By Ted McNaught, President, Critical Alert Systems

New smartphone paging apps are promising emergency medical personnel the same fast, reliable service as pagers. But before you retire your pager, remember that smartphone apps are only as reliable as the cellular or WiFi network they operate on. A comparison of cellular and paging networks and devices shows important differences that can dramatically impact the reliability and speed of critical messaging, as well as patient and public safety.

First and foremost, when using a smartphone paging app, your critical messages will be delivered on a cellular system. Those are the same networks that are notorious for dead zones, dropped calls and poor in-building coverage. Cellular systems were not designed for the delivery of critical messaging. In fact, most cellular carriers provide a disclaimer and caution users not to rely on their system for the delivery of critical messaging.

During many major disasters in the United States over the past 10 to 12 years, local cellular systems were quickly overloaded or disabled — proving virtually useless for emergency communications. Consider the aftermath of the tragic tornado that struck Joplin, Missouri on May 22, 2011. The cellular systems in that area were off line for up to four days.

However, even though the paging transmitter and antenna on top of St. John's Regional Medical Center were blown off the building, Midwest Paging's simulcast network delivered uninterrupted critical messaging when it was needed most. The surrounding transmitters continued broadcasting critical messaging to medical personnel inside the hospital, as well as first responders throughout the Joplin area.

Unlike a cellular network that sends a message from only one site at a time, a paging network sends the message over every transmitter in the network at exactly the same time. This is called simulcast technology, it's unique to paging and is significantly more reliable than the cellular networks used by smartphones.

Paging systems also have the unique capability to set up a common group address in any pager so that the same message is sent and received at exactly the same time to as many people as needed in a group. Stemi and Code teams are generally set up this way. Smartphone apps can't do that. Mass message delivery with cellular networks can result in

different delivery times for each device, often measured in minutes that can be critical for emergency responders.

Paging networks also outperform cellular networks when it comes to broadcast power. Paging systems have up to seven times the power of cellular networks, translating into better signal penetration in buildings and more reliable message delivery. A single paging transmitter site typically covers 176 square miles, while a typical cell site covers only 10 to 15 square miles. Pager systems typically provide better coverage in rugged and remote terrain than cellular networks.

While new smartphone paging apps tout single device convenience, smart phones have several drawbacks that limit their reliability for critical messaging. The smartphone interface can require users to take a number of steps to read a critical message, which can be difficult during emergencies. Busy medical professionals don't need complexity with their critical messaging device. With a pager, critical messages do not compete with e-mails, text messages, streaming video and other information received by a smartphone. Pagers are easy to use and solely designed to meet the demands of critical messaging.

Power failures often coincide with a crisis, making it difficult or impossible to recharge a Smartphone. And, having a smartphone tethered to a charger on a regular basis just isn't practical during emergency situations. The disposable battery in a pager generally lasts 3 to 4 weeks and is easily replaced. WiFi and Bluetooth enabled cell phones may provide redundancy, but they also significantly cut back on the phone's battery life. If you forget to enable those features, you may not receive your critical messages at all even when the cellular system is working perfectly just outside the building.

If you're still not convinced that trading your pager in for a software app is a bad move, then you should know that smartphones that operate on our nation's largest cellular network utilizing CDMA technology can't receive messages or texts when in use on a call. Imagine a critical care physician missing a message in a life or death situation just because they took a phone call. And, after upgrading your smartphone software, some messaging apps may not continue to work as they did before. Lastly, don't forget that many smartphones are also subject to malware and virus attacks.

Consider all the facts, and the consequences, before you trust your critical messaging to a smartphone app and the cellular network.

Ted McNaught is President of [Critical Alert Systems](#), the third largest paging carrier in the United States. Ted has worked in the paging industry since 1986, was the founding President of the American Association of Paging Carriers and currently serves on the Executive Committee, as well the Enterprise Wireless Association's Board of Directors.