



HOSPITAL COMMUNICATIONS AND CRITICAL MESSAGING

By Ted McNaught

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wireless

The past decade has seen remarkable innovation in hospital communications. While cellular technology created platforms for enhanced integrated communications, many hospitals still rely on paging for critical messaging. This is because the simulcast technology used by paging is incredibly reliable during a natural disaster or crisis when cellular networks are often disabled or overloaded. Also, in remote rural areas, paging often has superior reach compared to cellular network coverage.

These three case studies illustrate how this time-tested technology remains at the center of many hospitals' communication and critical messaging system.

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Critical Messaging in the Eye of the Storm

West Tennessee Healthcare and its 5,000 plus employees serve a sprawling swatch of the state with six hospitals, over twenty clinics, a freestanding outpatient surgery clinic, and other facilities and services. The centerpiece of the organization is Jackson-Madison County General Hospital. With 635 beds, Jackson-Madison provides services to the local population and is part of the disaster management team for the area. The facility also serves as the emergency hospital in case of disaster in Memphis, ninety miles away.

For years, Jackson-Madison relied on its own short-

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range radio transmitter to provide the power for its critical messaging needs. That changed in 2003 when a tornado blew down the tower supporting the transmitter. The hospital was still able to use their existing provider and system for in-house paging, but the cost of restoring the tower was prohibitive.

Kathy Mealer, telecommunications manager for West Tennessee Healthcare, brought in a vendor to provide off-campus paging. From the onset, the hospital was plagued with spotty coverage, especially in rural areas. "The paging provider threw a lot of technology at us in an attempt to improve our coverage, but it didn't solve our problems," noted Ms. Mealer.

In 2005, Ms. Mealer looked for other options to meet their critical messaging needs. Part of the solution was the installation of five new transmitters to build coverage based on the specific needs of Jackson-Madison Hospital. They also had a backup terminal installed to provide redundancy in case of emergency. "Pagers have been the only thing that have worked when we have tornadoes, and the backup terminal has been critical on several occasions," said Ms. Mealer.

Today, 2,200 Jackson-Madison Hospital pagers are supported by this critical messaging system. Additionally, work was done with the hospital's medical center EMS to create more redundancy for their system and to facilitate multi-page capabilities. The paging system also has helped improve efficiency and bed turnover for the hospital's bed board and patient transport systems.

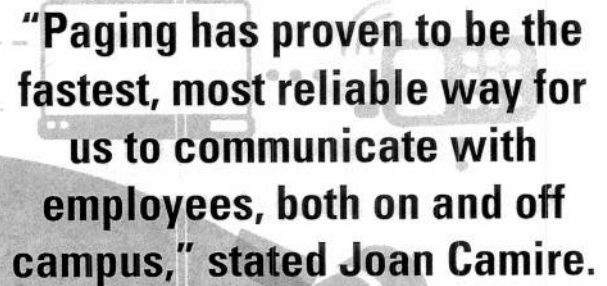
"Reliable communication is imperative for Jackson-Madison if we're to provide disaster services to our community and Memphis following tornados and other emergencies," concludes Ms. Mealer.

Local Commitment to Paging Solves Coverage Issues

For Wentworth-Douglass Hospital, one of the largest acute care hospitals in New Hampshire's Seacoast region, the reliability of its paging network is also crucial. When team members and other staff started missing pages while on-call and away from the hospital, solving the problem became a priority.

The hospital's telecommunications team discovered their national provider was removing transmission towers in "fringe" service areas – without notifying customers. This explained the decline in out-of-building coverage. However, a service outage and poor customer service drove Wentworth-Douglass to take action.

"We were blindsided by an unannounced service outage that knocked out more than 400 recorded pager greetings



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that we then had to go back and manually restore," said Todd Johnson, telecom engineer for Wentworth-Douglass. "Not only was that incident incredibly disruptive and time-consuming, it could have been avoided with better customer communications and service."

Wentworth-Douglass conducted a side-by-side comparison of a regional paging network with the hospital's current national provider. The test was simple. Wentworth-Douglass telecommunication staff carried a pager from both systems. During the test phase, all pages were sent to both devices to staff covering a variety of locations. The hospital then initiated a second test, this time with their critical teams.

The results were dramatic. The regional system solved the coverage issues and outperformed on delivery time, getting messages to pagers 50% faster. For a critical team that is timed on their callback response, these additional seconds can make all the difference.

While some national paging carriers may put less focus in certain markets and remove transmission towers, regional carriers are generally more committed to local market coverage and service.

Paging: The Gold Standard for Critical Messaging

Over the past twenty-five years, Southern Maine Medical Center (SMMC) has seen steady growth in the number of employees, programs, and facilities. Today, SMMC is a dynamic healthcare provider with more than 1,500 employees – approximately 200 of those are active physicians. In addition to a 150-bed full service medical center, SMMC also provides services at sixteen facilities located throughout southern Maine.

During this period of growth, SMMC made it a priority to maintain a critical messaging system that can meet their standards for fast, reliable communications, both on and off campus. Given the organization's growth, that goal has faced the challenge of reaching more employees who work and live in a larger, often rural, geographic area. More recently, the

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adoption of smartphones by staff has added complexity to the communications mix.

SMMC has maintained its own in-house paging system for close to forty years. According to Joan Camire, SMMC supervisor of telecommunications, "Anyone who wants to be found needs to carry a pager." In fact, all clinical and on-call personnel are required to carry pagers. There are 400 internal pagers, including the code team, that cover this key critical messaging category. SMMC also has several common cap codes for in-house and group pages that are used for incident events.

Camire, who has been with SMMC since 1968, notes that when the organization began growing, their in-house paging didn't cover enough range – especially with workers moving further away. They began working with a regional paging company to provide off-campus paging coverage, working to program individual pagers to make certain that critical messages are delivered, no matter where the recipient is located.

All of SMMC's pagers are alpha numeric, and SMMC's IT department has written and implemented a program that makes it easier for staff to send and receive pages. Utilizing the paging program, users enter the name of the person to be paged, and the pager number is automatically inserted – without them needing to memorize numbers. The user then

just enters the text, and the program automatically appends the name of the person for the return call.

"Paging has proven to be the fastest, most reliable way for us to communicate with employees, both on and off campus," stated Joan Camire. "We've also seen that patients respond far more positively when they see staff communicating with pagers as opposed to smartphones. The perception is that the pager is a professional device, while the cell phone is not work-related."

SMMC also leverages paging for its nurse call system, with alerts going directly to the nurse assigned to that patient. The paging system is even tied into EKG monitoring and will act as an alarm system for assigned caregivers. Additionally, alerts from the local county emergency management administration regarding severe weather and public safety and health issues are sent to the pagers of designated hospital staff.

"There have been a lot of developments in the past twenty years in communications technology and devices, but throughout it all, paging technology remains the gold standard for healthcare communications," said Camire. ☒

Ted McNaught is the president and COO for Critical Alert Systems and the president of the Critical Messaging Association.

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