

Hospitals H.E.A.R the Call for Emergency Communications

Message Comes Through Loud and Clear With H.E.A.R.



proper selective call sequence sent from an incoming ambulance or from another hospital. Upon decoding the proper sequence, the base station then passes the receiver audio to a tone remote located in the emergency room. Some base stations

also send an attention-getting tone to alert hospital staff that an ambulance is calling.

Since the channel is shared, most radios are configured to decode only the hospital's individual code, as well as regional and/or statewide all-call codes used for large incidents/disaster coordination. This saves the hospital from receiving unwanted radio communications.

Many systems were equipped with a second receiver. One channel is used for ambulance-to-hospital calls (typically 155.340 MHz), and the second channel is used for hospital-to-hospital calls (typically 155.280 MHz). The base station is equipped with two receivers so that simultaneous conversations on each channel can be carried on (if desired) and no calls are missed.

Directing traffic:

In a typical H.E.A.R. system, one hospital (usually

During a large-scale emergency, major utilities can be destroyed or disrupted. This can also include communication systems such as telephone and cellular systems, whose use is crucial for a coordinated response by public safety agencies. Recognizing this fact, 30 years ago many hospitals adopted the H.E.A.R. (Hospital Emergency Administrative Radio) two-way radio system. Initially developed by Motorola, H.E.A.R. was intended to provide ambulance-to-hospital and hospital-to-hospital communications, especially during natural disasters or other wide-scale emergencies.

The General Hospital channel:

Still in use today by thousands of hospitals nationwide, H.E.A.R. typically operates on VHF high band simplex frequencies, with 155.340 MHz and 155.280 MHz being the most popular. Each hospital base station monitors the H.E.A.R. frequencies for the

“The H.E.A.R. system was the only means we had to communicate.”

the region's major trauma center) acts as the communications hub. Individual hospitals respond to the H.E.A.R. network with available beds, surgical facilities and other vital information. The major trauma center then directs the flow of patients to various hospitals using the H.E.A.R. system.

While a large number of hospitals still own H.E.A.R. systems, many are seldom used since much of the equipment dates from the 1970s and is unreliable, or hard to keep in service due to obsolete equipment. However, it usually only takes one disaster to convince hospital administrators of just how indispensable the H.E.A.R. system truly is.

A trail of destruction:

On December 16th, 2000 a category F4 tornado roared through Tuscaloosa County, Alabama cutting a 750-yard wide swath of destruction. Although the tornado was only on the ground for 18 minutes, in that time it managed to kill 11 people and injure 75, as well as overturning cars and semi trucks, demolishing mobile homes and private residences, and even flattening an almost-completed shopping center.

Not surprisingly, telephone circuits and cellphone calls were jammed with calls as people frantically dialed 9-1-1 or tried to reach loved ones. The situation would have been even more serious had it not been for the fact that Tuscaloosa's major trauma center, DCH Regional Medical Center, had a functioning H.E.A.R. system.

"The H.E.A.R. system was the only means we had to communicate," says Sharon Harrison, Head of Trauma at DCH. "The cell systems were all down. The regular telephone lines were mostly down, too. Our old H.E.A.R. system was probably 30 years old but it worked. We've always used it because many of our outlying ambulance services are in rural areas where it can take 40-45 minutes to get to a hospital and they still rely on H.E.A.R. Also, helicopters land at our hospital and they call in through our H.E.A.R. system instead of using cellphones."

Upgrade for reliability:

Although the H.E.A.R. system had once again proven indispensable, the need to update the system was obvious.

Glen Davis is the Executive Director for West Alabama EMS and directs regional EMS activities for seven counties in west central Alabama: "We installed the original H.E.A.R. system in 1976, but it was becoming unreliable. Sometimes you couldn't get in and it was very staticky. Plus, the technology was obsolete and we had difficulty replacing radios."

To remedy the situation, Davis contacted Tim Chism of **Chism Communications**, a Tuscaloosa-based company that enjoys a reputation for excellence with many of the region's EMS providers.

Now H.E.A.R. this:

Chism Communications came up with a solution employing two Zetron products expressly designed for hospital communications: the H.E.A.R. Decoder and the Model 284 Digital Tone Remote.

"I actually put in two of the Zetron H.E.A.R. decoders," Chism explains, "because the H.E.A.R. system has two channels—one for local and one for regional. Instead of hooking them up to a base station, which is fairly expensive, we hooked them up to two 100-watt Kenwood mobile radios mounted in a rack. This was not only cheaper, but it also provided some redundancy."

Tim Chism also replaced the aging tone remote at the ER Nurse's station with Zetron's Model 284 Digital Tone Remote. A perfect replacement for the obsolete Motorola T1600 or T5600, the Model 284 features parallel operation, a built-in paging encoder, and a host of advanced user interface features. The Model 284 provides 9 programmable keys, functions, tone frequencies and durations, an alphanumeric display, and unselect audio on up to three lines—all this in a compact package with a small desktop footprint.

Increased reliability, enhanced functionality:

The Zetron H.E.A.R. Decoders brought a number of enhanced capabilities, such as the ability to record radio channels. DCH had recently upgraded the recording system for its medic control lines. However, they lacked the ability to record incoming H.E.A.R. radio messages until they acquired the H.E.A.R. Decoder.

"DCH Regional got the upgraded H.E.A.R. system because it's our regional medical referral center, serving 11 counties in our part of western Alabama," Davis explains. "We felt they needed something beside cellular communications. Some of the smaller ambulance companies can't afford monthly cellular charges, so they use the H.E.A.R. system exclusively to contact the hospital. Also, the Department of Health and State EMS regulators require hospitals to provide at least two dependable forms of communication and the H.E.A.R. system is the cheapest to maintain."

A budget-saving solution:

Many of the nation's hospitals already have H.E.A.R. systems in place. Rather than reinventing the wheel with expensive new technologies, Zetron's H.E.A.R. Decoder provides a simple, easy, and cost-effective means of upgrading existing H.E.A.R. systems to 21st century functionality.

Reprinted from Zetron's monthly newsletter, the Advantage, August 2002. All trademarks are the property of their respective owners.

Zetron, Inc. PO Box 97004, Redmond WA 98073-9704 USA

Ph: (425) 820-6363 Fax: (425) 820-703 Email: zetron@zetron.com

European Office: Zetron, Inc. 27-29 Campbell Court, Bramley, TADLEY, Basingstoke, RG26 5EG, UK Phone: +44 1256 880663 Fax: +44 1256 880491

Australasia Office: Zetron, Inc. PO Box 3045 Stafford Mail Centre, Stafford QLD 4053, Australia Phone: +61 7 3856 4888 Fax: +61 7 3356 6877

See Zetron price list for option pricing.

Specifications subject to change without notice.

005-7315A

November 2002



www.zetron.com