



# VoIP Saves Lives

## Large Michigan hospital cuts nurse response time with Vocera VoIP solution.

**With 1,062 beds, Beaumont Hospital in Royal Oak, Michigan** is one of the largest health-care facilities in the metropolitan Detroit area.

Vocera Communications, Inc. ([www.vocera.com](http://www.vocera.com)) in Cupertino, California develops and provides wireless communications systems that enable instant voice communication among mobile workers.

Over the last few months, Kimberly A. Bonzheim and her team have helped improve the safety of all patients monitored by centralized telemetry at Beaumont. Bonzheim is the Director of Noninvasive Cardiology and Cardiac Rehabilitation. She led a team to re-engineer an alarm communication process that had been plagued with communication delays between the central telemetry station and the technicians and nurses. Bonzheim and her team integrated a wireless VoIP communication system from Vocera with Beaumont's telemetry system to reduce delays, improve teamwork, and improve patient response times.

Before the integrated system was implemented, critical response times were measured at 9.5 minutes. After it was implemented, critical responses took only 39 seconds.

The history of Beaumont Hospital's Vocera Communications System deployment began in the Spring of 2005. Hospital administrators, the nursing staff, and the telemetry department attended a series of meetings that resulted in the realization that the existing paging system was both inefficient and disruptive.

"The pagers were one-way technology with lots of issues," Bonzheim says. "We would send out a page, and [the nurse being paged] would have to find a phone and call us back. Plainly, we needed to find a two-way solution."

Inconveniences were exacerbated by such negative factors as the overhead paging system's potential to disrupt the sleep of patients, as well as the interruption to individual nurse workflow when a nurse called back.

"If they carried a cell phone with them, this would not be a hands-free solution, plus there's no automatic escalation [of alerts] when you are dealing with voice to voice," explains Bonzheim.

In staff meetings, they came up with the feature set that they wanted, including hands-free operation and immediate alert capabilities. "We didn't find any vendor similar to Vocera," Bonzheim says. "Their offering was very unique, and seemed to match our needs."

In March 2005, the hospital launched a six-month pilot program using Vocera in Beaumont's Oncology unit. The initial cost of the experiment was around \$200,000. The program proved so successful that the hospital brought three more units on board this year.

Here is a typical Vocera Communications System actual use scenario at Beaumont Hospital. A cardiac patient in room 6610 is hooked up to monitors that constantly track her heart rate and other vital signs. The monitors are connected to the hospital's telemetry department.

Unexpectedly, the patient exhibits an episode of irregular heartbeat. That information is sent from her bedside to the telemetry department, where staff trained in evaluating such data make a quick decision about whether the situation is a blip or requires a nurse to be notified immediately. If the decision is to contact a nurse, a voice and text message are sent to the nurse responsible for that patient.

The nurse is wearing a Vocera Communications System badge that receives the alert information. The nurse then immediately proceeds to the patient's room and initiates the necessary steps to evaluate and address the situation. There is no overhead paging and no time wasted by looking up the nurse's duty assignments and phone extensions. Far more than just operational efficiencies are at stake. It can literally be a matter of life and death.

Currently, Beaumont's Vocera Communications System deployment has 400 users, working three shifts 24 hours a day. There are some 100 Vocera Communications System badges in use at any one time, each priced at around \$300.

Bonzheim says that Beaumont's goal is a facility-wide Vocera deployment throughout all of its 15 units, but a date for complete conversion from what is now a mixed Vocera-legacy pager solution has not yet been specified.

When Bonzheim describes the deployment, she sure sounds like an advocate for facility-wide implementation of Vocera Communications System's badge-based solution. She says, "Even just by sitting down at the telemetry station and listening to what's going on, you can tell there's so much more complete information [going to the nurses] and an improvement in teamwork as a result." **V**

*Russell Shaw is our Features Editor. He is also author of the book, Wireless Networking Made Easy. You can reach him at [rshaw@vonmag.com](mailto:rshaw@vonmag.com).*