Monitoring patient vital signs wirelessly

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When it comes to patient monitoring, Palomar Medical Center in Escondido, Calif., is the first hospital in the country to use a wrist-worn device that continuously monitors a patient's vital signs. The U.S. Food and Drug Administration-approved ViSi Mobile System from San Diego-based medical device company Sotera Wireless is the technological enabler that transmits patient data to nurses in the hospital, providing them with around-the-clock surveillance of key vital signs.

In February, Palomar Medical Center "went live" with the ViSi system on a general surgical floor for post-operative, low acuity care patients. Benjamin Kanter, (right) Palomar Health Chief Medical Information Officer, said the mobile system measures a patient's heart/pulse rate, blood pressure, skin temperature, breathing rate and oxygen levels.

The system wirelessly monitors about 20 patients, with a maximum capacity of 34 patients, according to Kanter. Eventually the hospital wants to expand the system and have all patients in the unit monitored 24/7, he said.

"A large percentage of patients that die in hospitals do so in what are traditionally unmonitored settings," Kanter told FierceMobileHealthcare. "In my personal opinion, if you're sick enough to be in a hospital, I don't care if you're not in the ICU you still need to have some kind of safety valve or protection."

In addition, Kanter argued that generally, hospital patients who experience unexpected deterioration in their medical status resulting in health emergencies start to decline six to eight hours prior to these events. The leading indicators that these patients are starting to have problems are basic vital signs, not telemetry, he said.

"The ViSi platform gives us real-time vital sign monitoring and it's already showing benefits," Kanter said. "We've had circumstances where this system has allowed us to discover things and to intervene, which we would have missed for a long period of time had we not had this in place."

The wrist-worn device is the hub of the ViSi mobile system connected to two core electrodes--one for a patient's thumb sensor and the second for a chest sensor. Currently, nurses carry Cisco 7925 VoIP phones that receive alerts and alarms from the system, notifying them of changes in a patient's condition.
Before implementing the ViSi system, the hospital's nurses would take patients' routine vital signs as part of their regular rounds several times per day using bulky monitoring equipment. Now, those vital signs are taken continuously and less intrusively.

According to Kanter, a major benefit of using the system is that nurses don't have to wake up patients to take their vital signs, especially at night. In the future, the hospital plans to fully integrate the system with its electronic health record system, reducing the need to manually document patient vital signs and improving overall patient safety.

"We absolutely, fundamentally believe that every single hospital in the United States is going to have this kind of technology in place over the next 10 years," Kanter said. "I don't think you can afford to be a patient in the hospital and not have monitoring."

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