

Kaweah Delta Medical Center

Next-generation telemetry supports unified wireless network strategy

As medical devices evolve into systems that can capture comprehensive patient information, they are increasingly viewed as a rich source of critical data. As a result, forward-thinking hospitals are seeking networked solutions that consolidate infrastructures, streamline operations, and provide significant cost efficiencies – while advancing quality of care.



Located in the rural heart of California, Kaweah Delta Medical Center is a global frontrunner in the use of information technology to support its mission of providing high quality, customer oriented and financially strong healthcare services.

This focus on technology was clearly demonstrated when Kaweah Delta brought telemetry monitoring to a new 250,000 square foot wing that primarily serves cardiac patients. When evaluating which telemetry system to install, the hospital not only considered the clinical capabilities of the solution, but also factors such as connectivity to its existing infrastructure, data transport and ease of support.

As a result, Kaweah Delta selected the Wi-Fi based Infinity® M300 patient-worn monitor from Dräger, rather than the latest version of telemetry transmitters that ran on a separate proprietary network from its existing telemetry provider.

Dave Gravender, Vice President, Chief Information Officer at Kaweah Delta explains, “We couldn’t expand the current vendor’s network to handle 250,000 square feet, so it would have required a whole new server and antenna system. Also, we recently had made decisions that reinforce the unification of medical devices and IT, so proprietary wireless networks didn’t make sense. We had already designated precious capital dollars to create a

redundant, medical-grade wired and wireless network that we wanted to leverage and the Dräger solution best met our needs.”

Supporting the vision – technically and clinically

According to Gravender, Kaweah Delta’s vision is the integration of medical devices and healthcare IT to make sure the hospital can deliver the six rights of information management: getting the right information to the right person at the right time in the right place in the right format for the right value. The combination of previously installed Dräger bedside monitors and the new Infinity M300 patient-worn monitors – all of which are connected to the Infinity CentralStation over the Infinity Network – supports the hospital’s vision of a converged network because it is based on standard Wi-Fi technology.

“When I first heard that Dräger was coming out with 802.11 Wi-Fi telemetry, I was very excited,” continues Gravender. “The addition of the Infinity M300 to our existing solution completes our vision of convergence of voice, data, medical data, images, and video all using one network.”

While the M300 was the hospital’s first choice from a technical perspective, it also had to pass muster clinically. “When it comes down to caring for the patient, clinicians are the ones that have to choose the best device to support the patient. And they agreed that they liked the Dräger system better,” says Gravender.



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Leveraging the wireless infrastructure yields significant cost savings

Infinity M300 devices connect to the hospital's wireless network via Dräger's Infinity OneNet infrastructure, which lets the hospital securely move life-critical patient data on its existing network. This eliminated the need to install additional network components – streamlining network management and saving the expense of maintaining a separate wireless network for the telemetry system.

"The best selling point as far as we were concerned was the fact that we could employ Dräger monitors on our existing infrastructure," explains James Lee Howard, CE Manager, Clinical Engineering Department at Kaweah Delta. "Had we stayed with our previous vendor, it would have been substantially more expensive – probably around \$2 to \$3 million dollars more – because it would have necessitated putting in their proprietary antennas."

The Dräger monitoring solution also enabled Kaweah Delta to streamline its maintenance efforts. Now instead of having to physically go to a bedside to troubleshoot a monitoring issue, technicians can sit at a terminal, call up the information and usually fix it from their desk. This has allowed the hospital to cut down on some of the man hours of doing things manually, freeing the staff to focus on more critical initiatives.

For physical location tracking, the hospital has an active system where the staff can type in an IP address and the system will search for a monitor. Unless the monitor is turned off, the system identifies the location of the monitor within 3 meters of its location.



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Conventional wireless infrastructure optimizes patient care

By having a conventional wireless LAN infrastructure, Kaweah Delta was able to realize substantial savings by moving from individual centrals on each of its three telemetry monitoring units to one central telemetry viewing room where any patient in the hospital can be monitored 24/7.

"As a result of this kind of setup, you can improve the management of your space and staff resources and can standardize your processes better," said Les Bauer, RN, BSN, CCRN and Nurse Manager of the ICCU/3W at Kaweah Delta Medical Center. "Another benefit is that we can now leave each patient in the specialty unit that takes care of them best and still be able to monitor them remotely."

For example, historically a patient with a fractured hip would have been taken off the orthopedic unit and placed on a cardiac floor simply because that patient had a history of atrial fibrillation. Thus the patient was removed from the environment where they were best cared for and put on a cardiac floor just to be monitored. "Now we can leave that patient in the specialty that takes care of them the best – that has the best level of service, the best outcomes, and the fewest number of complications – and still be able to monitor them over there."

Realizing the vision

According to Gravender, Kaweah Delta's converged network helps physicians make more informed decisions. "I think this solution has helped us achieve our vision. Now, our clinicians are able to make more informed decisions and practice better medicine because patient information is available in more places and in different ways than it was before. It comes back to those six rights of information management: Are we getting the right information to the right person at the right time in the right place in the right format for the right value? I think we are."



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About Kaweah Delta

Located in the heart of California's agricultural San Joaquin Valley, Kaweah Delta Medical Center is the largest acute care hospital in Tulare county, the second-leading producer of agricultural commodities in the United States. Kaweah Delta Medical Center provides a full spectrum of healthcare services – cardiac services, cancer care, sleep disorders and vascular labs, specialized orthopedics, rehabilitation and mental health services – using an array of cutting-edge medical technology.



Infinity M300 patient-worn telemetry monitor

This Wi-Fi based telemetry system provides access to vital signs data, both at the patient site and the Infinity CentralStation – enabling rapid assessment and decision support to achieve the best patient outcomes. Supporting adult and pediatric patients, Infinity M300 has a color display that shows ECG, heart rate and SpO₂, integrated alarming that enables alarms to be heard and controlled locally, and a built-in rechargeable battery. Two-way communication with the Infinity CentralStation, which is fully networked with the hospital information system, supports comprehensive data sharing.

THE CHALLENGE:

Kaweah Delta needed to implement telemetry monitoring in a new 250,000 square foot wing. The hospital was looking for a telemetry system that could use its existing wireless network.

THE SOLUTION:

Dräger Infinity M300 patient-worn telemetry monitors with two-way communication to Infinity CentralStations, running on an Infinity OneNet installation.

THE RESULTS:

Patient safety

- Faster response to patient alarms
- Ability to keep patients in specialty unit where they receive best care, rather than moving them to a cardiac floor simply to be monitored

Cost effective

- Leverages the hospital's existing wireless infrastructure
- Saves time and expense of deploying and managing separate network for telemetry

Time savings

- Built-in rechargeable battery saves time of checking and changing disposable batteries

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