



# The Computerworld Honors Program

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## Final Copy of Case Study

**LOCATION:**  
*Santa Clara, CA, US*

**ORGANIZATION:**  
Kaweah Delta Medical Center

**YEAR:**  
*2011*

**ORGANIZATION URL:**  
<http://http://www.kaweahdelta.org/>

**STATUS:**  
*Laureate*

**PROJECT NAME:**  
MyKD Initiative

**CATEGORY:**  
*Emerging Technology*

### PROJECT OVERVIEW

Located in Central California, Kaweah Delta Medical Center (KD) doesn't let its rural location or mid-size status limit the quality of care available to its patients. The hospital embraces emerging technologies to help provide its community with services to rival even major hospitals, from a well-respected pediatric hospitalist program to nationally recognized cardiac and cancer programs. Understanding that the best patient outcomes result from timely, well-informed decisions, KD focuses on the concept of the "six rights": getting the right information to the right person, at the right place, at the right time, in the right format, to ensure the right value. As new smartphones such as the iPhone began to emerge, the hospital's IT department recognized the opportunity to help its doctors achieve new levels of responsiveness by putting complete patient data and clinical applications in their hands literally anywhere they go, at any time. KD already used virtualization technology to deliver secure remote access to its clinical systems from any thin client, desktop, or laptop computer. But extending this capability to mobile devices posed new challenges. KD's 280 physicians work as independent contractors, prohibited by law from being provided with hardware by the hospital. With no way to standardize the devices its doctors carried, KD's IT staff faced the prospect of developing separate remote access tools for every mobile platform they happened to use. Instead of pushing back against the proliferation of mobile devices, KD embraced it and created a new infrastructure to support it. Spurred by the April, 2010 introduction of the Apple iPad, whose larger screen offered even greater utility for medical applications, the hospital used Citrix virtualization software to create "MyKD," a complete virtual desktop which can run on any type of computer, mobile or otherwise. Doctors simply log into their MyKD desktop on any device, from PCs to thin clients to tablets and smartphones, to access all of the hospital's clinical systems, including the Siemen Soarian electronic medical records system, labor and delivery monitoring systems, X-rays, EKGs, and other real-time data. The MyKD initiative has made it possible for doctors to keep tabs on their patients, respond to their needs, make fully informed decisions, and relay instructions to hospital personnel at any time, from any location: home,

office, grocery store, even a highway rest stop. Inside the hospital, doctors can carry their iPad on their rounds and use it to share information with patients. Nurses and other employees no longer have to wait their turn for fixed desktops or “computers on wheels” with varying levels of performance. Dieticians and service hosts use iPads running MyKD to discuss meal options with patients and take their orders. Continuing to push the leading edge of healthcare IT, KD is now conducting a pilot of Citrix XenDesktop, the latest technology for desktop virtualization, to help its users achieve even greater mobility, productivity, and effectiveness. Throughout the organization, KD’s virtual desktop infrastructure helps people capture, share, and use information more quickly and efficiently to deliver truly world-class quality of care.

## **SOCIETAL BENEFITS**

Doctors can get the information they need quickly and easily—even far from the hospital—to make well-informed decisions in real-time, helping improve patient outcomes. The project also demonstrates the viability, value, and cost-effectiveness of a next-generation healthcare infrastructure based on electronic medical records and ubiquitous digital access.

## **PROJECT BENEFIT EXAMPLE**

Every patient at KD can benefit from the MyKD initiative. Before, if a nurse wanted to show a doctor a patient’s EKG strip or X-ray, it meant that each of them had to get to a fax machine—delaying care when every minute counts. Now, he or she can simply log in with an iPad and see the information directly, then give the nurse appropriate instructions in real-time. One physician remarked that during a “Code Blue” event, indicating a medical emergency, he was able to use MyKD to access the patient’s history and physical information, improving his knowledge of the patient’s condition. The physician noted that the ability to access to the electronic record directly from the patient room was vital, given the critical nature of the event. Dr. Roger Haley, KD’s Medical Director of Informatics, reports that MyKD has helped him and his patients in numerous ways: “I have reviewed lab reports and ordered dialysis from remote locations, preventing harm by avoiding complications of renal failure, which can occur if this is not provided promptly. I have ordered antibiotics sooner, improving outcomes. I use it frequently for immediate access to knowledge bases such as UpToDate, MDConsult, and MedLine so I can deliver better care. On a least one occasion, I reduced cost and might have prevented complications due to an unneeded procedure when I looked up a prior EKG for comparison with the one in question. Another time, when looking at a telemetry display, I noted low oxygen saturation results and phoned the nurse. Although she had already noted that the patient was not receiving oxygen and was correcting the situation, I was reassured to see another example of our improved monitoring capability, even by doctors who are physically elsewhere.” MyKD has also made Dr. Haley’s practice easier: “I have access to the data I need, when I need it, where I need it.” The mobile virtual desktop is useful for patient education as well: “I can show graphical results such as X-rays to the patient, as well as electronically published patient education material.” From a lifestyle perspective, it makes a big difference for doctors to be able to finish their documentation and sign off on charts when they’re home with their families instead of working late at the hospital. A better work-life balance helps them stay at the peak of their capabilities, and helps KD retain skilled, in-demand medical professionals. While the utility and value of electronic health records has long been a key tenet of healthcare reform, many healthcare organizations have found it difficult to implement these systems broadly while maintaining patient confidentiality in accordance with HIPAA and other regulations. With MyKD, KD provides instant access to these records—as well as other clinical systems—throughout the hospital and beyond, while



ensuring full confidentiality and HIPAA compliance through full data encryption. Across the organization, desktop virtualization has helped KD reduce technology costs by making it possible to replace computers and tablets with less-expensive iPads and thin clients.

## **IS THIS PROJECT AN INNOVATION, BEST PRACTICE?** Yes

### **ADDITIONAL PROJECT INFORMATION**

KD's Citrix desktop virtualization environment has made it easier to implement systems of all kinds throughout the organization. The hospital recently took advantage of Citrix's "single-image management" to roll out a barcoded medication administration project to aid patient safety by verifying the "five rights of medication management": right patient, right drug, right dose, right route, and right time. With only a single desktop view, and no need to configure individual workstations, the IT team deployed the Siemens Med Administration Check™ (MAK) system by installing computers in more than 300 patient rooms. This helps nurses make better-informed decisions and increases patient medication safety.