Operating with a healthy dose of security
CentraCare Health System's multipronged approach to medical safety and patient care

by Fredrik Nilsson

In the wake of CentraCare's explosive growth over the past four years, the security department has been working hard to coordinate safety and security measures at all of its locations. With a legacy of analog cameras and DVRs, an aging access control system and difficult-to-secure narcotics cabinets, the healthcare group began searching for new technologies. The objective was to maintain central supervision of the increasing number of facilities and reduce risks for patients and staff.

This search led CentraCare to Pro-Tec Design, an integrator and security consulting firm based in Minneapolis. Together they started by replacing the old access control system and improving the narcotics supervision by integrating IP video. Shortly after, the hospital's security team discovered new and innovative uses for their IP security system in connection to the ambulance bays, the emergency room and the helipad.

Suturing security holes
Four hospitals (St. Cloud, Long Prairie, Melrose and Sauk Center), four long-term care facilities, almost a dozen clinics and numerous specialty services operate under the CentraCare umbrella. However, the different systems and old technologies among the different facilities raised concerns about potential risks and liability. Some facilities used DVR-based analog surveillance systems while some others relied solely on the presence of security staff to solve problems. In either case, CentraCare did not have the capability to integrate surveillance between sites or centrally monitor cameras to help mitigate problems.

Yet, surveillance was not a top priority in the beginning; the hospital decided to focus on access control. While many of the facilities used magnetic card-readers to restrict employee and public access to certain areas of the premises, it was questionable whether it would be cost-effective to expand the system since the number of CentraCare acquisitions continued to grow.

All facilities housing controlled substances used standard key-entry medicine cabinets, even though to open each cabinet it was required to use two separate keys. Unfortunately, duplicate keys had been made over the years and without an integrated video system, there was no way to monitor who was accessing the cabinets.

With the help of Pro-Tec, CentraCare began to systematically upgrade its security systems across its multiple facilities. "CentraCare initially called us in to replace their old card reader system," recalls Tim Ferrian, Director of Sales and Marketing for Pro-Tec Design. "With all their acquisitions, expanding the existing system would have been cost-prohibitive." Pro-Tec recommended Lenel OnGuard, a more scalable, IP-based access control system that could be easily managed over the

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health system's network.

Together with the new access control card system, CentraCare implemented new drug cabinets that could only be opened by authorized staff by swiping their new ID cards. "We eliminated the two-key system, but the solution wasn't foolproof . . . yet," says Bill Becker, Director of Safety and Security for CentraCare Health System. "Someone could still borrow someone else's ID to get into the locker."

This situation led the conversation to video surveillance and what CentraCare could do with IP-based technology to verify who was really swiping the ID card. "We have now adopted a redundant, cross-reference approach to controlling access to narcotics," shares Becker. "Not only is Pro-Tec Design installing card readers on every new drug cabinet, they are also mounting miniature network cameras in the dropped ceilings to record who's actually opening the locker."

Originally, Pro-Tec installed fixed dome network cameras and leveraged privacy masking in Milestone XProtect® video management software (VMS) to ensure that only the cabinet was seen on video and not the rest of the patient's room. Today they have moved towards pinhole-sized and HDTV-quality AXIS P12 network cameras focusing solely on the drug cabinets.

Following the success of the narcotics monitoring solution, CentraCare extended this two-part access control and video strategy to other sensitive areas in the hospitals and clinics, including pharmacies, human resources and other high-security locations. "Coupling these network cameras with access control has become a standard for CentraCare," states Becker.

When CentraCare first decided to expand its surveillance project, Pro-Tec attached video encoders to existing analog cameras to digitize the video streams and connect to the network back to the main security office in St. Cloud. Since then, a majority of the original cameras have been replaced by more advanced, high-resolution network cameras. Today, more than 300 surveillance cameras have been installed over multiple CentraCare properties stretching hundreds of miles across central Minnesota. Only a handful of the original analog cameras, now network-enabled with encoders, are still in place. All cameras are managed through Milestone XProtect® Corporate video management software from the health system's security center.

"Because CentraCare runs fiber between most of their facilities, we are able to stream video back to St. Cloud's security center for storage," explains Tim Ferrian. "Where the pipeline is too small, we record and store the video locally. However, the security director and his team can still view live and recorded video from all the cameras in the Milestone system."

CentraCare currently has about 108 terabytes of total raw storage across the system residing on Pivot3 servers. "Every year we add more storage," shares Ferrian. "And every year they find more places where cameras would be useful that are going to need that storage."

Expanding from risk management to patient care
While risk management might have been the initial motivation for tightening security, CentraCare continues to broaden its use of network surveillance cameras to include other areas of operation. Today, Becker's security team uses the IP cameras on a daily basis to help the medical staff improve patient care and safety.

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For instance, security uses HDTV-quality IP cameras to keep an eye on high-risk patients in the emergency and psychiatric evaluation rooms. If an officer watching the video monitor observes a patient growing restless or agitated, they will immediately enter the room to keep them from falling off the cart or becoming unruly. Milestone XProtect® Smart Client allows users to see multiple views at a time, saving the cost of stationing an officer in every room.

"In keeping with HIPAA regulations and our own privacy and confidentiality policies, we do not record the video in those rooms. We only view it live," states Becker.

In addition to more traditional locations for video surveillance such as front entrances, gift shops and food service operations, CentraCare security also uses fixed dome network cameras with audio recording capability to monitor their weapons screening area – where security checks everyone entering the building for firearms and other potentially harmful objects. "Being able to compare what's being said with what you are seeing quite clearly on the screen helps us in addressing complaints against our officers," says Becker. He recalls one individual who accused a CentraCare officer of being rude, patting him down inappropriately and then stealing his cellphone. When Becker offered to show the accuser the recorded video of the alleged incident, the complaint was immediately withdrawn.

Responding to emergency fly-ins and drive-ins
Pro-Tec Design also installed vandal-resistant and weather-proof fixed domes on St. Cloud's helipad and in their ambulance bay. Becker explains that the cameras serve for a dual purpose: to help expedite the dispatch of medical personnel and to keep the transport areas safe. The exceptional light sensitivity of the IP cameras makes them an excellent fit for the variable lighting conditions in these outdoor locations since crisp and clear images are delivered around the clock.

CentraCare also authorizes its air ambulance service (Life Link III) to monitor the helipad camera from their own dispatch center to make sure they are not directing one of their helicopters to a pad that is already occupied by another service. "It is a good safety catch," says Becker. For added protection, Becker always assigns an officer to be on the helipad whenever a helicopter is scheduled to land. The officer is required to maintain constant radio contact with the air service. CentraCare is also using this surveillance strategy for the helipads at the Melrose and Sauk center Hospitals.

From surveillance stations in the Emergency Trauma Center, security monitors activity in the ambulance bay, a fast-paced hub of activity that can hold up to six ambulance rigs at a time. Because the cameras support audio, Becker's team has eyes and ears on the situation to determine if the arrival is a high-risk patient who needs additional emergency staff or if a problem patient has arrived and the physical presence of a security officer is needed.

Protecting the NICU, PICU and birthing rooms
The more CentraCare familiarizes themselves with the IP surveillance system, the more opportunities seem to arise. For instance, CentraCare has deployed IP cameras along the third floor hallways of St. Cloud Hospital to monitor foot traffic; coverage of this area was a priority since the ward houses newborns, infants and moms.

Since the hallway lights are dimmed at night for patient comfort, it was important to install cameras that could deliver crisp, true-color fidelity even in low-light conditions. Almost immediately after installing new Axis fixed domes, security was able to use the digital pan-tilt-zoom and highly light-sensitive lightfinder capabilities to catch a thief as he passed through the ward. As an added precaution, the healthcare system has long-term plans to install the same cameras inside the neonatal and premature infant care units as well as the birthing rooms.

While CentraCare remains dedicated to respectful privacy of their patients, they continue to apply a healthy dose of surveillance to all their facilities to ensure the safety and security of their patients and staff. According to Becker, the pushback from patients has been nearly non-existent and CentraCare staff has welcomed the step up in security. "Our employees firmly believe that the cameras and microphones are there for their protection."

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