

Cisco Video Surveillance in Hospitals: Ten Ways to Save Money and Improve the Patient Experience

What You Will Learn

Video surveillance in hospital settings can help provide high-quality, affordable healthcare. This white paper, intended for hospital executives, explains how hospitals can use Cisco® Video Surveillance solutions to lower costs and improve patient safety:

- Capturing video can mitigate expenses associated with patient sitters, drug diversion, other theft, and false accident or injury claims.
- Hospital personnel gain earlier awareness of incidents that can compromise patient safety by using video analytics software to send an alert based on loitering, boundary crossing, or queue length.
- As part of emergency preparation, video surveillance provides situational awareness to help officials plan an effective response.

Following are ten use cases for video surveillance in hospitals using a Cisco Video Surveillance solution and the hospital's existing Cisco network. Hospitals can begin with one use case and later take advantage of the same infrastructure to add others, increasing the return on investment (ROI).

1 - Centralize Patient Observation

Healthcare facilities hire patient observers (sometimes called patient sitters) or assign staff to monitor patients at risk for falls or on suicide watch, and those who are confused or agitated. Unlike private-duty personal care assistants, a patient observer's sole responsibility is to notify staff when the patient engages in potentially self-injurious behavior, such as getting out of bed without assistance or pulling out tubes. Observers generally receive hourly pay, an unreimbursed expense. Some healthcare facilities must ask the patient's family to provide sitters, imposing a burden for working family members.

Healthcare organizations can lower the costs of patient observation using high-definition (HD) video surveillance and two-way communications. With the Cisco Virtual Patient Observation solution, trained staff in a central operations center can observe multiple patients over the facility's existing network, quickly alerting staff when intervention is needed (Figure 1). For patient privacy, the solution transmits live video only, and does not record. Click [here](#) to learn more about the Cisco Virtual Patient Observation solution.

Figure 1. Remote Patient Monitoring Can Reduce Staffing Costs, Reduce Risk and Exposure, and Enable Communications Between Clinicians and Patient Sitters



2 - Remotely Monitor Emergency Department

In crowded emergency departments, there is a risk that busy personnel might not notice when a patient loses consciousness in the waiting room, or when an admitted patient has not been checked at the required frequency. More risk occurs when large groups crowd the lobby to wait for news about friends or family.

Used with Cisco Video Surveillance, video analytics software serves as an additional set of eyes:

- Counting the number of people who enter and exit, and alerting security personnel when crowds exceed a defined size.
- Creating an accurate count to help make sure everyone has left the building if evacuation is necessary.
- Detecting when a person crosses the threshold of a room: Hospital personnel receive an alert on a desktop or mobile device, and can either visit the room or view real-time video to see if the visitor is authorized. The system can also be programmed to send an alert if the threshold is **not** crossed for a defined period of time, indicating that a clinician has not checked the patient at the prescribed interval (Figure 2).

Figure 2. Video Analytics Can Serve as an Extra Set of Eyes in Emergency Departments



3 - Monitor for Drug Diversion

Drug diversion is a problem not only in the main pharmacy, but also in satellite pharmacies, dispensing areas on the floor, loading docks, and other areas of the hospital. One cost is financial loss. Another is the safety risk resulting from substitution of saline for morphine, for example. Video surveillance can also help hospitals identify healthcare personnel who divert drugs for personal use.

Prominent video surveillance cameras can help deter drug diversion (Figure 3). It is more effective to transmit video over the network for central storage than to store it locally, because centrally stored video remains available even if the perpetrators damage local equipment. Video analytics software that detects loitering can send an alert if an individual remains in a drug-dispensing area or adjacent area longer than a specified time.

Figure 3. Video Surveillance Serves as a Deterrent to Drug Diversion and Aids Investigations



Hospitals can also use Cisco Video Surveillance and Cisco Physical Access Control solutions to begin capturing video when someone enters a controlled area, enabling security staff to visually identify people using stolen badges.

4 - Help Prevent Infant Abduction

Some hospitals track infants by giving them a wrist or anklet bracelet with an embedded radio that issues an alert if the infant is moved outside the nursery or unit. Although radio frequency identification (RFID) tracking provides early awareness of possible abduction, hospital personnel do not know what the abductor looks like, and might let the person pass through a door with the baby hidden.

By deploying video surveillance cameras in nurseries and other areas, hospitals can capture the suspected abductor's image to include with the alert. Personnel can view the image on desktops, smartphones, and digital signs throughout the hospital.

5 - Monitor Patients with Diminished Faculties

Hospitals can also use video to monitor patients with diminished faculties resulting from psychiatric or neurological conditions, head injuries, drug use, and so on. Video analytics software can detect when these patients cross a threshold, and then send an alert or take another action. For example, when a confused patient wearing a bracelet with a radio transmitter passes by a Cisco Digital Signs display, the sign can play a prerecorded video of that patient's family member asking the patient to return to the room.

6 - Help Prevent Theft

Video surveillance also helps prevent theft and hoarding of equipment as diverse as wheelchairs, medical equipment, televisions, and furniture. Hospitals can affix RFID tags to assets ranging from wheelchairs to medical equipment, and track their location with a Cisco wireless network. The location of the equipment is superimposed on a map of the hospital. Hospitals that integrate Cisco Wireless Location-Based Services with Cisco Video Surveillance can automatically send an alert to appropriate personnel when items are moved outside a prescribed boundary. Then personnel can simply click a link to view video from the closest camera.

7 - Comply with Operating-Room Procedures

Deploying video surveillance in operating rooms encourages staff to follow procedures. This helps to avoid hospital-acquired infections and wrong-site surgeries.

8 - Support Triage in Disaster Scenarios

To plan an effective response to pandemics or disasters such as earthquakes, hurricanes, or shootings, hospitals can deploy mobile video surveillance cameras on the scene, increasing situational awareness. Viewing real-time video feeds helps personnel ascertain the number of people requiring care, which immunization stations have long lines, and so on.

Oakland County, Michigan, and Harvard Kennedy School's Leadership for a Networked World Program worked with Cisco to [simulate a pandemic response](#). The goal of the exercise was to quickly mobilize vaccine-dispensing locations and the incident-command structure to provide access to life-saving vaccinations. Using the Cisco IP Interoperability and Collaboration System (IPICS), first responders could communicate directly using any device, including radios, push-to-talk (PTT) phones, IP phones, and PCs with client software. Cisco Video Surveillance Manager streamed live video directly to the emergency operations center as well as to participants' mobile devices.

During the successful exercise in Oakland County, officials could view real-time video feeds from the dispensing sites for early awareness of problems such as too many citizens flowing into a particular dispensing location. This intelligence helped other officials make decisions based on accurate, up-to-date information.

9 - Defend Against False Accident Claims

Unnecessary healthcare costs result from false claims filed by workers or patients reporting falls, needle sticks, and so on. Without a way to refute false claims, hospitals often must pay. By deploying video surveillance cameras in lobbies, hallways, and other areas, hospitals can refer to video evidence to defend against invalid claims.

10 - Increase Safety in Public Areas

Video surveillance also helps hospital safety and facilities teams monitor parking lots and other public areas for break-ins and suspicious persons. Visible surveillance cameras can reduce crime and fear of crime for patients and staff.

Why Cisco?

Cisco provides all of the technology that enables the use cases in this paper, as shown in Table 1. Cisco also offers complete professional services, including planning, design, implementation, operations, and optimization. Using Cisco technologies atop a Cisco network eliminates integration challenges, helping you experience the benefits of the investment sooner and with less risk.

Some advantages of Cisco Video Surveillance Manager for healthcare environments include:

- The software is certified to operate on the Cisco Unified Computing System™ (Cisco UCS®), which lowers costs by combining compute, storage access, networking, and virtualization in a single system managed from a single interface.
- A single instance of the software can support up to 10,000 video surveillance cameras.
- New Cisco 6000 Series Video Surveillance IP Cameras support better imaging with low light, feature onboard standard-definition (SD) cards with flash memory, and are sealed against moisture (IP66 rating).
- Hospitals can extend the life of their existing video surveillance cameras because Cisco Video Surveillance Manager works with analog as well as IP-based cameras from other vendors.

Table 1. Cisco Solutions for Video Surveillance in Hospitals

Function	Solution	Location
Video	Cisco Video Surveillance IP Cameras	Patient rooms
	Cisco Video Surveillance Manager	Operations center
Access control	Cisco Physical Access Control	Protected areas such as drug-dispensing sites
Two-way communications	Virtual sitters' interface: Cisco IPICS Dispatch Console	Operations center
	Cisco IPICS Server	Operations center
	Cisco IPICS Router Media Services (RMS)	Operations center
	Cisco IPICS Land Mobile Radio (LMR) Routers	Each facility; used for radio communications

For More Information

To learn more about Cisco Physical Security solutions, visit: <http://www.cisco.com/go/physec>.

To learn more about Cisco solutions for healthcare, visit: <http://www.cisco.com/go/healthcare>.



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