Video Technology Strategies for Hospitals are Moving Beyond Security

Discover how Milestone's open platform video technology can help hospitals, clinics, and long-term healthcare facilities better protect patients and staff.

milestone

Table of Contents

Introduction

The global healthcare industry has long been leading the charge with technological innovation in medicine, including telemedicine for patient care, robotics for surgical procedures, 3D printing for prosthetics, and gene editing using CRISPR. Despite technological advancements, hospitals face round-the-clock challenges and are doing more with less. For example, there are more patients, fewer trained medical staff, and fewer security guards. Faced with these issues, hospitals need to explore more technological possibilities to optimize the resources at their disposal.

Hospitals face many challenges on various fronts – from individuals intending harm to disasters that cause damage and disrupt operations. To illustrate, cyber threats can have physical consequences, such as a network attack interrupting critical healthcare systems.

To mitigate these threats, healthcare facilities must implement robust physical and cyber security measures, such as access controls, surveillance systems, security personnel, and emergency response plans. Moreover, regular security assessments and staff training are also essential to ensure facilities remain prepared for potential threats.

The problems that security teams face range widely. Here are a few areas where healthcare administrators are focusing their attention:

Physical Threats
- Unauthorized Access
- Theft & Vandalism
- Workplace Violence
- Verbal Aggression
- Active Shooter Incidents
- Terrorism

Compliance
- Patient Safety
- Patient Privacy
- Quality of Care
- HIPAA Regulations
- OSHA Requirements
- Accreditation Certification

Cyber Threats
- Complex Interconnected Systems
- Legacy Systems & Software
- Insufficient Cybersecurity Measures
- Employee Error and Training

Beyond security, healthcare organizations are seeing staff shortages and an aging population. As a result, many administrators are turning to patient-centric tools to improve care more efficiently. Security experts with Milestone Systems are seeing hospital staff use security tools, such as IP video cameras and video management software, to solve many problems in healthcare. In this eBook, we'll look at advancements in security technology and ways that video technology is useful within and beyond security.

Situational awareness in the healthcare environment

A new wave of technological security advancements is available in hospitals and clinics. Today, healthcare administrators focus on hardening their security systems and improving procedures to protect people in their care from various threats.

The complexity of security concerns in healthcare environments can seem overwhelming. However, a hypervigilant state of situational awareness and threat assessment requires healthcare security operators to remain alert. A prepared security team will protect the entry and exit doors, administrative offices, clinical labs, pharmacies, supply rooms, patient units, and other limited access areas within the facility. This preparation for protection applies whether it is a small or medium-sized clinic, a long or short-term care facility, a large hospital, or a patient records storage site with medical records servers.

Milestone and our technology partners have diverse experience in the healthcare marketplace, helping you with the complex challenge of securing your clinic, hospital, or long-term care facility. With the help of this partner network, Milestone focuses on developing business outcomes for customers in key vertical markets, including healthcare.

In addition, Milestone Systems manufactures open platform software for video technology. In traditional uses, video is an excellent security tool, allowing organizations to capture evidence and conduct forensic investigations when incidents occur. Recent technological advancements include tools such as video analytics, integration with IoT sensors, and other innovations from our partner community. Our modern approach to security helps you move into a proactive stance, identifying problems early and preventing incidents before they can get out of hand.

CUSTOMIZABLE

Milestone partners with third-party technology companies, leveraging new capabilities integrating with XProtect. Our Milestone technology partners continually update their solutions, empowering facilities to make the most of their current systems.

SCALABLE

Milestone's open platform expands to meet the institution's growing needs and adapts to future technologies. XProtect supports a few devices on a local network or scales to support thousands of devices spanning multiple locations.

INTEGRATION

Milestone's open platform supports various devices and includes advanced software integration, meaning hospitals will gain access to a community of collective security and operational applications. As a result, XProtect is a versatile VMS for many enterprise needs.

INTUITIVE

Intuitive and comprehensive, XProtect allows workers with less technical understanding to learn how to use the video technology platform. Milestone offers training for operators and administrators so staff can learn best practices.

Milestone integrates software and hardware from third-party vendors into our flagship video management software (VMS). The XProtect® open platform improves your experience and extends security into all aspects of your infrastructure. In addition, XProtect works with disparate components, bringing everything together in a consolidated view of information and data from multiple sources. As a result, information from many integrated systems is viewable via a single interface. With XProtect in place, your operators will have easy access to configuring systems and can quickly assess and respond to the demands within your healthcare organization.

XProtect Open Platform Video Management Software

Advancements in security technology

Healthcare organizations of any size can benefit from access control integration with video systems. This tool is especially useful for controlled substance lockup. Suitable access control protocols will include a level of verification and approval. Still, administrators also have an audit trail for access and searchable parameters paired with video data for archival purposes. The audit trail can provide critical information in a forensic review, while video provides evidentiary proof.

An automated access control system allows approved clinical staff to enter controlled substance and medical equipment lockup areas without any delay required for approval. For example, access control systems that manage automated medication dispensing systems may integrate with Milestone XProtect, providing video evidence of staff transactions. In addition, the access control system also connects to the employee badging system in most medium to large hospitals and clinical facilities.

Modern access control systems allow for granular configurable parameters, granting entry to those who need it and restricting visitors and unauthorized personnel from sensitive areas.

Additionally, healthcare organizations need to comply with various regulatory and accreditation rules and best practices to protect assets so that there is a trackable record during an audit.

Securing medications with logged access and a stored video record can provide incontrovertible evidentiary data as required by regulatory and accreditation rules. In addition, when these best practices are in place, the access card reader is associated with nearby security cameras to capture video when the door is unlocked.

The XProtect platform can link the video with card key access through searchable metadata for forensic review. This multi-layered security approach provides a barrier that keeps people away from secured substances while allowing quick access to those with approved credentials. Furthermore, XProtect will maintain an audit trail with evidentiary data.

XProtect Access is a common add-on to Milestone's open platform, integrating your current access control system. When the individual systems work together, operators will see added value and efficiencies they may only find when systems are connected. An access control system integrating with XProtect video technology allows operators to execute most of their workflow in the central software interface.

Learn More: XProtect Access

Proactive prevention for threat mitigation

Video security is a must in helping detect, assess, and prevent large-scale attacks within the facility. These large-scale threat mitigation tools might include some of these measures:

Advanced Video Analytics: Use your video data to predict and identify aggressive behavior or locate missing patients that might have wandered out of their monitored area.

XProtect Rapid REVIEW: An extension to the XProtect platform, Rapid Review makes searching and finding video evidence easier by helping your staff review hours of footage in minutes and easily find missing people or objects of interest.
**XProtect Rapid REVIEW**

XProtect Incident Manager: This XProtect extension helps your security staff by simplifying reporting and evidentiary management.
XProtect Incident Manager

Firearm/Incendiary Detection: Early detection using integration with third-party tools is critical in mitigating attacks by guns or explosive devices within the clinical campus environment.

Software Integrations: Third-party hardware and software integrated with XProtect include network-attached cameras, access control systems, patient monitoring systems, an array of various IoT sensors, building management systems, staff panic buttons, and much more.

The XProtect platform easily integrates with your existing security infrastructure, whether your needs cover a single office, an entire building, or a multi-site network of healthcare campuses spread across a broad region.

Hospital security maintains the physical safety of patients, medical personnel, administrative staff, and visitors. To hold accreditation, hospital staff responsible for maintaining security must receive training about physical threats from their first day in the clinical environment. As a result, critical incident training and aggression aversion tactics are part of the standard training of hospital staff. Therefore, technology solutions can be of great benefit to quickly identify and alert aggressive behavior and assess threats to public-facing personnel.
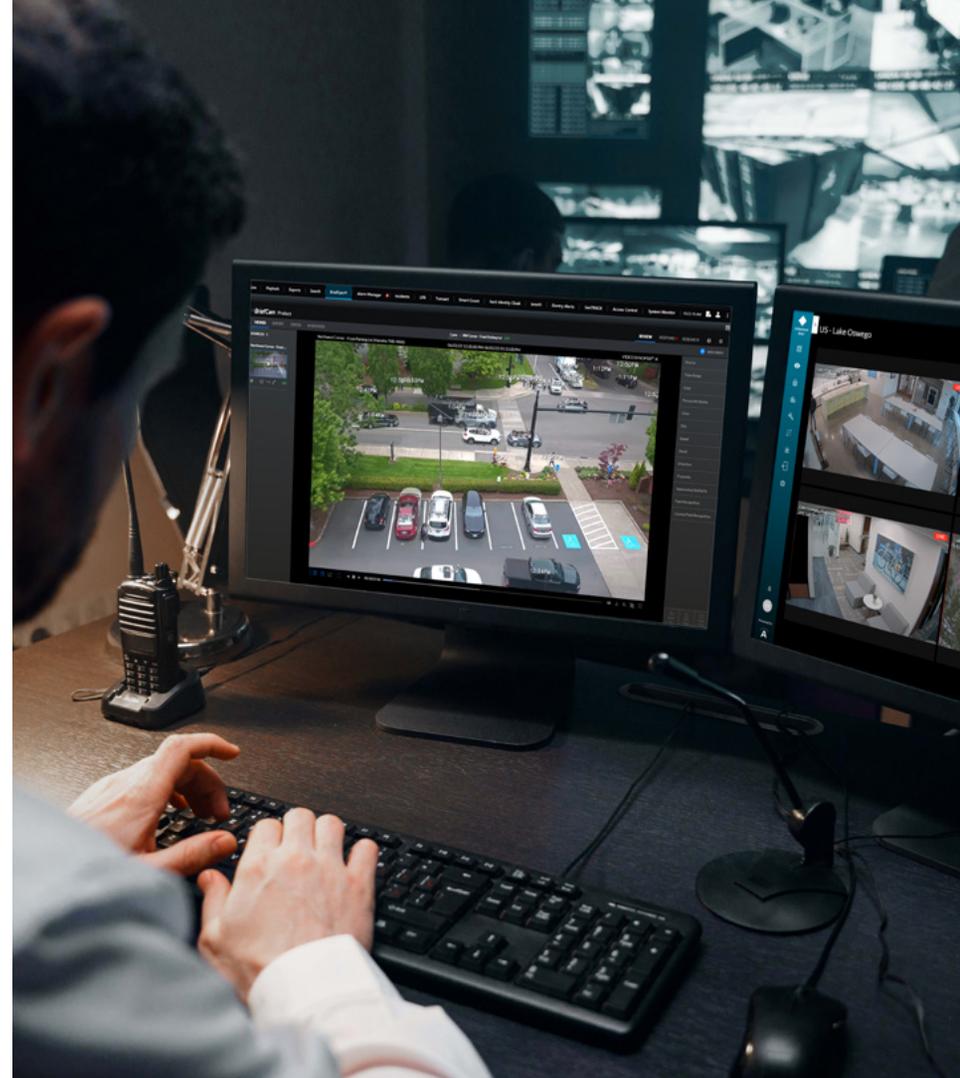
Observing patients with privacy in mind

Observing patients in the hospital is always a challenge. On top of the added pressure of staffing shortages, the strain on patient care has become significant, and personnel at small clinics and large hospitals feel the burden. Therefore, the most immediate concerns in the clinical setting are managing an overworked staff and continuing to provide high-quality care to patients.

Hospitals respond to these concerns by using intelligent technology solutions allowing centralized patient monitoring. These solutions often use video that allows for remote observation and initial patient contact but also protects patient privacy and drives efficiency. Patient monitoring solutions will never replace the requirement for personal one-on-one patient care during diagnosis and contact care situations. However, there are times when new technology can provide cost-effective and scalable solutions for patient response, monitoring for falls and other self-harm conditions, and bed monitoring, as well as providing for contagion reduction scenarios.

Milestone's XProtect provides an extra set of eyes in patient units, with time-tested solutions that protect patient privacy and provide rapid notification when specific criteria trigger an alert, such as a patient fall.

Milestone is introducing XProtect Hospital Assist, an add-on product designed exclusively for hospital units caring for patients needing 24/7 or situational observation. Hospital Assist facilitates dedicated remote patient observation and helps nursing staff to maximize staff efficiency, react rapidly to patient incidents, and improve patient quality of care.

Your hospital security team might already be using XProtect to secure your hospital. Now, XProtect Hospital Assist allows you to observe multiple patients simultaneously while protecting patient privacy, minimizing unnecessary patient room visits, and using staff resources best.

Learn More: XProtect Hospital Assist

EFFICIENCY
- **Monitoring ICU Patients**
- **Monitoring Isolation Units**
- **Tracking Patient Notes**
- **Aid Rehabilitation Facilities**

REACT QUICKLY
- **Mitigate Slip/Fall Risk**
- **Receive Instant Notifications**
- **Optimize Patient Care**
- **Improve Situational Awareness**

PATIENT CARE
- **Improve Patient Experience**
- **Assure Patient Dignity**
- **Engage with Patients**
- **Ensure a High-Quality of Care**

Observing patients with privacy in mind (con't.)

XProtect Hospital Assist solves several problems regarding patient care. Using video technology to observe patients, staff nurses now have new patient-centric tools at their fingertips.

PRIVACY BLUR

Ensuring patient dignity and privacy is a cornerstone of high-quality care. The Privacy Blur function in Hospital Assist allows live video blurring when patient observation is not required. The level of the blur is adjustable and removable in real-time. Furthermore, privacy blur includes a configurable automatic timeout turning off the blur to avoid being forgotten by the medical staff.
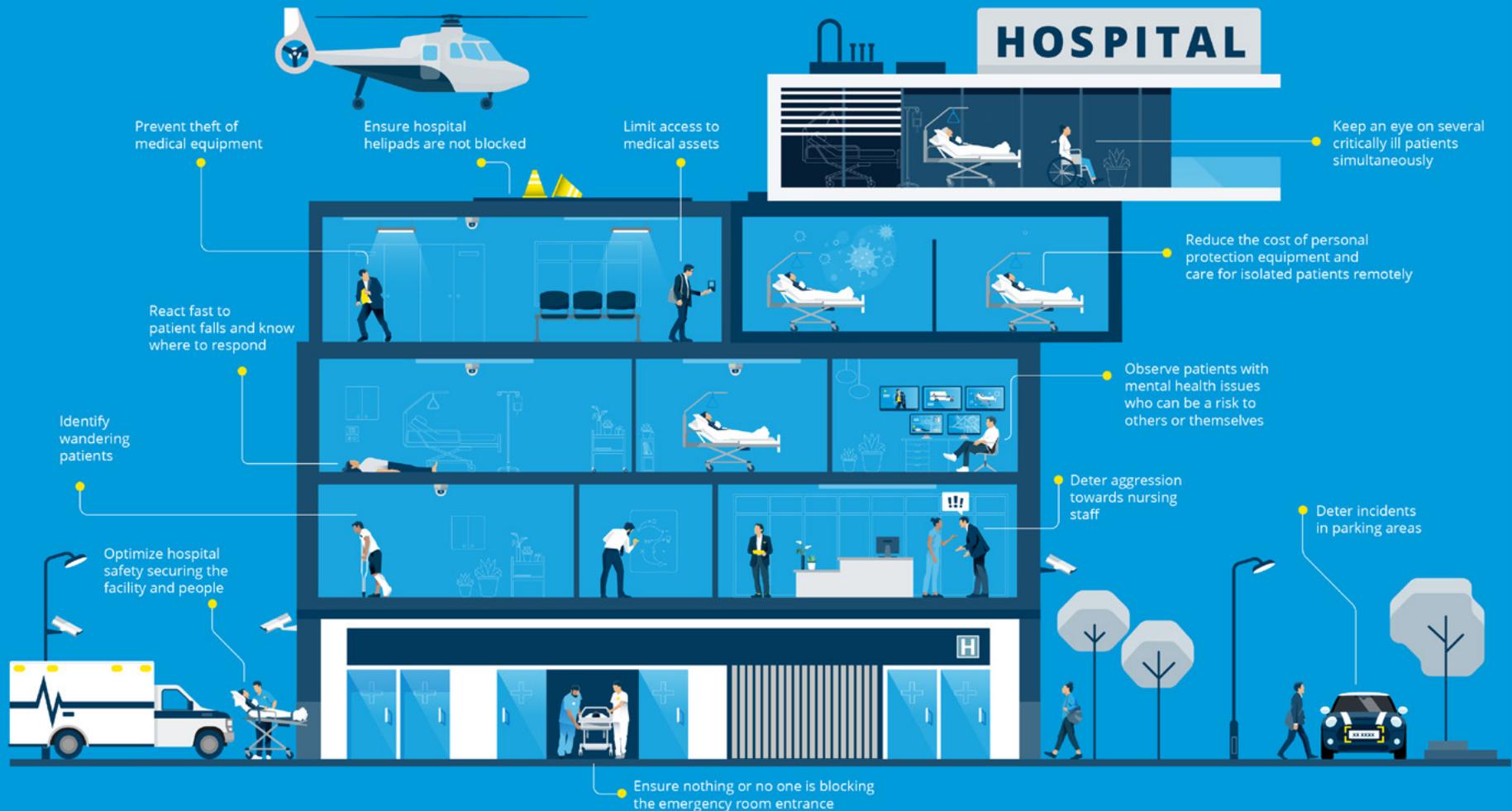
FALL DETECTION

A patient fall can result in fractures, lacerations, or internal bleeding, leading to prolonged treatment and increased fall-related costs. XProtect Hospital Assist includes automatic, AI-driven fall detection alarms, allowing your staff to respond rapidly and aid the fallen patient.

TWO-WAY COMMUNICATION

Nursing staff can provide added social contact or quickly interact with patients who need attention. With live video and two-way audio communication, your team can constantly engage with patients who require interaction. In addition, staff can instruct patients to stay in bed and await assistance when necessary.

STICKY NOTES

A complete patient overview is critical in a hectic hospital environment, with a constant flow of new inpatients and rotating staff shifts. With Hospital Assist, add Sticky Notes to each camera view to display essential data, such as patient names, a consultation schedule, or other critical details to ease workflows and staff shifts.

View the XProtect Hospital Assist product feature videos

Prevent theft of medical equipment

Ensure hospital helipads are not blocked

Limit access to medical assets

Keep an eye on several critically ill patients simultaneously

Reduce the cost of personal protection equipment and care for isolated patients remotely

React fast to patient falls and know where to respond

Observe patients with mental health issues who can be a risk to others or themselves

Identify wandering patients

Deter aggression towards nursing staff

Deter incidents in parking areas

Optimize hospital safety securing the facility and people

Ensure nothing or no one is blocking the emergency room entrance

Healthcare compliance and patient data security

Regulatory compliance and accreditation guidelines have IT departments scrambling to secure networks, data storage systems, and patient monitoring systems so that breaches of patient confidentiality do not expose patient data unnecessarily.

Patient data security is a high-risk concern in hospitals and clinical settings, such as long and short-term care facilities, rehabilitation centers, nursing homes, and therapeutic care facilities. Compromised networks and unsecured records cause concern for patient privacy and expose the healthcare organization to HIPAA violations. Your employees have likely experienced the need to protect patient data and reduce exposure to curious and prying eyes.

When one considers that a video monitor sitting on an exposed desktop could breach patient confidentiality protocols, the healthcare administrator understands that employees must maintain high standards of vigilance when it comes to patient data.

Healthcare compliance and patient data security (con't.)

The exponential rise of cybersecurity breaches requires healthcare administrators and security operators to think beyond the physical safety of the clinical facility and focus more on protecting digital information. Patient privacy of personally identifiable data and HIPAA compliance remains a high priority, especially now that patient records go to digital data centers that are network-attached and easily accessible online to patients and their caregivers. Milestone video technology is useful in helping your healthcare organization maintain appropriate compliance with healthcare regulations. For example, here are a few critical ways your staff can help protect patient data and foster compliance standards in your healthcare organization:

Education and Training: Staff should receive regular training and updates on HIPAA and other applicable data protection regulations, and on the organization's specific policies and procedures.

Strong Authentication: Implement strong authentication measures, such as using unique usernames and strong passwords or multi-factor authentication, to access patient data and systems.

Access Control: Limit access to patient data to only those employees who need it for their job duties. Regularly review and update access permissions.

Encryption: Use encryption technologies to protect data in storage and during transmission between systems.

Secure Disposal: Properly dispose of physical and electronic records containing patient data when they are no longer needed. This may include shredding paper records and securely erasing data from electronic devices.

Incident Reporting: Encourage employees to report any actual or suspected breaches of patient data confidentiality or other compliance violations.

Regular Audits: Perform audits to monitor compliance with data protection regulations and organizational policies. Use the audit findings to identify areas for improvement and make necessary changes.

Vendor Management: Ensure that third-party vendors who handle patient data adhere to the same data protection standards as the healthcare organization. Include data protection clauses in contracts and perform regular vendor assessments.

Physical Security: Implement physical security measures such as locked doors, secure storage areas, and surveillance cameras to protect patient data in paper form or on electronic devices.

Security Awareness: Foster a culture of security awareness among staff by sharing best practices, discussing data protection risks, and providing ongoing education.

Maintain Software and Hardware: Regularly update and patch software, operating systems, and hardware to address known vulnerabilities and minimize the risk of data breaches.

Business Continuity and Disaster Recovery: Develop and maintain business continuity and disaster recovery plans to ensure the availability and integrity of patient data in case of emergencies, system failures, or natural disasters.

Cyber attacks on patient data

Patient data is a visible target for cyberattacks, and those threats are on the rise, with ransomware, data breaches, and identity theft occurring at an unprecedented rate. In defense against cyberattacks, Milestone works to integrate systems with the XProtect platform while providing robust protection in compliance with regulations. Furthermore, Milestone recommends IT best practices that limit access to malicious operators.

Milestone automates many procedures, such as securing cameras and network-attached devices, and helps to block unauthorized access through next-generation firewall technology and camera compliance enforcement.

Staff diligence is a significant first step for a hospital or clinic. However, closing the back door with the implementation of Milestone security protocols helps healthcare facilities secure their vital patient data and repel cybercriminals before they ever gain access to your network resources and patient data stores.

Milestone Systems Hardening Guide

*XProtect VMS hardening guide - 2023 R1
Improve and secure your XProtect VMS using security measures and best practices.

Hospital operations and facility management

Some healthcare administrators use XProtect VMS in facility maintenance monitoring. In addition, organizational logistics teams and operations office staff extend the use of existing security tools by integrating operational and facility monitoring solutions into the security infrastructure.

Many IoT sensors integrated into XProtect also communicate using BACnet and can alert staff to notable incidents for several Building Management Systems (BMS). Here are a few examples of systems that operations staff may want to monitor:

Heating, Ventilation, and Air Conditioning (HVAC): HVAC systems are essential for maintaining a comfortable and safe environment for patients, staff, and visitors. Proper monitoring ensures temperature, humidity, and air quality remain within appropriate levels.

Fire and life safety systems: Fire alarm systems, smoke detectors, and sprinkler systems need monitoring to ensure rapid response in an emergency.

Energy management: Hospitals consume significant amounts of energy, and monitoring energy usage can help identify opportunities for energy conservation and cost savings.

Medical gas systems: Medical gas systems, such as oxygen, nitrous oxide, and medical air, are critical in hospitals and need to be monitored for leaks, pressure, and supply levels.

Emergency power systems: Staff members should monitor backup power systems, such as generators and uninterruptible power supplies (UPS) to ensure they function correctly and can provide power during an outage.

Water management: Monitoring water systems is essential for maintaining water quality, identifying leaks, and ensuring an adequate supply for patient care and facility operations.

Environmental monitoring: Monitoring environmental conditions, such as air quality, noise, and radiation levels, is crucial to maintain a safe environment for patients and staff.

Integrating these systems into a centralized BMS and monitoring in the XProtect platform allows hospital staff to control and optimize various building systems in real-time, ensuring a safe, comfortable, and efficient environment for patient care.

In turn, XProtect can collect information from the BMS, capture video from associated cameras, and notify appropriate personnel when systems need attention, or an emergency requires a proactive response.

Integrating these systems into a centralized BMS and monitoring in the XProtect platform allows hospital staff to control and optimize various building systems in real time, ensuring a safe, comfortable, and efficient environment for patient care.

In turn, XProtect can collect information from the BMS, capture video from associated cameras, and notify appropriate personnel when systems need attention or an emergency requires a proactive response.

XProtect VMS & BACnet Protocol
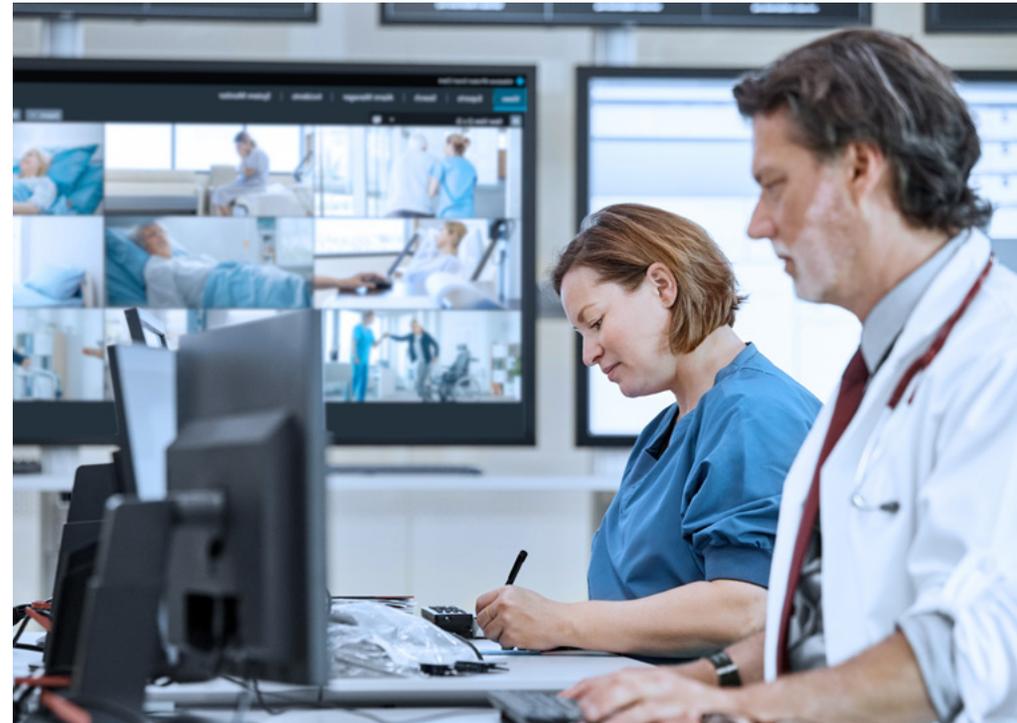
When hospital operations impact the patient experience

In hospital hallways, the staff strives to maintain unrestricted traffic flow for people and equipment. However, a hospital bed left in a busy hallway or blocking an emergency exit can create a severe problem when an emergency occurs. The XProtect platform can help the operations staff respond to these situations proactively.

Another way operations administration can leverage cameras is to verify when rooms are available for cleaning. As a result, managers can quickly schedule cleaning for operating rooms or exam rooms when necessary. In addition, supervisors can use video to verify and respond quickly when a room clears. Hospitals can work efficiently and better manage the bottom line using these measures.

Mark Johnson is a healthcare professional working with Milestone Systems to help improve business outcomes relevant to end customers. Mark tells us that the Hospital Consumer Assessment of Healthcare Providers and Systems Survey (HCAHPS) is a patient scoring system that strives to improve healthcare quality and patient experience. Mark says, "XProtect can help organizations attain higher HCAHPS scores by enabling staff to monitor the environment more efficiently. Two questions asked of a patient where XProtect can help are as follows:

- During this hospital stay, how often were your room and bathroom kept clean?
- During this hospital stay, how often was the area around your room quiet at night?

When healthcare organizations use XProtect, IoT sensors can detect excessive noise, sustained noise, or dirty rooms. As a result, notifications can alert house nursing supervisors or charge nurses. Without prompt notifications, the overall survey scores can impact the hospital's reputation, patient satisfaction, and positive patient outcomes."

Improving the Patient's Experience with a Multimodal Quiet-at-Night Initiative

In another example, air quality sensors are helpful in storage supply rooms to alert the staff to chemical spills. Similarly, the software can be tied into building maintenance systems to promote a positive response to a potentially harmful situation within the clinical environment.

> When healthcare organizations use XProtect, IoT sensors can detect excessive noise, sustained noise, or dirty rooms. As a result, notifications can alert house nursing supervisors or charge nurses. Without prompt notifications, the overall survey scores can impact hospital scores, patient satisfaction, and positive patient outcomes.
>
> **Mark Johnson**
> National Business Development Manager, Healthcare, Milestone Systems

Summary

Hospital personnel experience risky situations regarding regulatory compliance and liability for patients, staff, and hospital administrators who are assessing conditions in the healthcare environment and looking for ways to lower that liability. Leveraging new technologies can vastly improve their understanding and provide better operational intelligence.

Milestone Systems XProtect VMS provides a platform for your organization's healthcare environment. You can access traditionally disparate systems in your organization's infrastructure by integrating your systems. As we've discussed, XProtect works with your network-attached cameras, access control systems, patient monitoring systems, and building management systems.

Milestone builds software with an open platform in mind. As a result, we seek to combine systems that have been traditionally siloed and separated. Furthermore, we partner with a wide range of technology manufacturers that make products that integrate with Milestone products. Our mindset of scalability, flexibility, and openness allows you to protect your clinic, healthcare facility, or a widely spread network of medical campuses.

Milestone's experts develop solutions for healthcare organizations worldwide, providing tested software, working with clinics and hospitals to protect patient privacy, hardening their physical security and network perimeters, and bringing innovative solutions into the clinic.

Milestone knows healthcare and works diligently to secure your facilities in a way that meets regulatory requirements, plugging security holes, protecting patient privacy, and locking down the clinic in a way that hospital administrators can trust.

**MAKE THE
WORLD SEE**

Milestone is a leading VMS provider for many healthcare facilities in the Americas region that benefit from the flexibility and scalability of the open XProtect platform. Another product by Milestone is Kite, a cloud-delivered VMS providing a VSaaS platform that is perfect for smaller clinics. Contact our team of experts to understand how Milestone can futureproof and enhance your healthcare security and operational capabilities.

For more information, visit:
https://www.milestonesys.com/for-your-industry/industries/healthcare/

Are you interested in seeing how XProtect can help your healthcare organization? **Book a demo** with a Milestone expert.

◆ milestone