

# CREATING SAFE AND SECURE HOSPITAL ENVIRONMENTS

#### How Wireless Communication Improves Physical Security for Hospitals

(For Hospital Facilities and Security Professionals)

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#### According to the American Hospital Association's Fun Facts on U.S. Hospitals,

over 36 million people are admitted each year to all U.S. hospitals.

But with that tremendous demand comes the potential for tremendous inefficiencies. For example, the National Center for Biotechnology Information (NCBI), part of the National Institute of Health (NIH), found a 500-bed hospital loses more than \$4 million each year because of communications inefficiencies.

If you're in a leadership position or aspire to be in one, within a hospital facility or security team, you have a lot on your plate.

You're continually evaluating, identifying, developing, and implementing improvements to meet the needs of your hospital(s).

You and your colleagues take an active role in your hospital's emergency management and emergency preparedness.

You know how to think critically and solve problems, and you're exceptionally good at collaborating with other departments.

You know that you need to always keep the needs and expectations of patients, their families, and hospital senior management top of mind.

# Creating Safe and Secure Hospital Environments

#### In this eBook you'll learn,

- What goes into creating a safe and secure hospital environment
- Key safety and security considerations for patients, visitors, and hospital staff and management.
- What goes into complying with facility and departmental fire and safety policies
- · What can be done to improve response time
- How facilities directors think about budgeting and evaluating costs vs. benefits
- How facilities' needs vary across different departments within a larger hospital
- What can be done to improve operational efficiency and communication between staff members
- How wireless communications improve physical security for hospitals



## What Goes Into Creating a Safe and Secure Hospital Environment

When it comes to creating and maintaining safe and secure hospital environments, the general public may first think of well-publicized cybersecurity breaches at hospitals across the U.S. However, at a more basic level, outside of (and more adjacent to) hospital IT teams, hospital facilities and security teams, confront a host of challenges on a daily basis and work towards achieving many interrelated goals.

Facilities directors focus on the operational efficiency of resources. For example, when a new building is under construction, hospital facilities professionals collaborate with their counterparts in security to make sure that the new building is as secure as possible.

- In a hospital, who is responsible for dealing with a break in a water pipe?
- What about when doors are unlocked but should be locked?
- Who takes ownership of two-way radios, allowing for both instant communication and one-to-many communications?



These are all the domain of hospital facilities teams.

Security directors and their staff, on the other hand, spend a lot more time putting out fires -- including locating lost patients. Hospital security teams take the lead on preventative maintenance when it comes to video surveillance, analytics, AI, intrusion alerts, and incident management.

- What can possibly go wrong?
- How can you respond as quickly as possible?
- Why is that door open when it shouldn't be?
- Who needs to pay attention to the dozens of monitors, consoles, and dispatch points?
- In a post-COVID-19 world, who needs to be at every entrance checking temperatures?

These concerns all rest with hospital security teams.

In addition to facilities staff and security staff, a hospital's emergency management director, also known as a hospital's emergency preparedness coordinator, plans and implements emergency management protocols to prioritize the safety of patients, staff, and visitors

## Key Safety and Security Considerations For Patients, Visitors, and Hospital Staff and Management

Now that you know what goes into creating a safe and secure hospital environment, let's look at some of the most important safety and security considerations for a hospital's patients, visitors, and staff.

#### What kinds of voice communications, by two-way radio, allow for coordination on the way to the hospital?

When it comes to protecting patients, focus on the following questions:

- Who is coming in and out of patient rooms?
- What is the access control plan for patient rooms?
- Who are authorized users?
- What different levels of access need to be controlled?
- What can be done to improve response time by nurses, technicians, and doctors to drive a higher level of medical safety?
- What increases the physical safety of patients?
- What kinds of possible pitfalls and problems exist when it comes to the safety risks to patients themselves?
- What improves admittance safety to hospital emergency rooms?
- When patients are in transit to a hospital by ambulance, with emergency medical technicians, how can patient vitals be relayed to ER departments while on the way to the hospital?
- What kinds of voice communications, by two-way radio, allow for coordination on the way to the hospital?

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When it comes to protecting visitors, hospitals often consider visitor safety as an extended part of the visitor experience, where these kinds of questions arise:

- Who is coming in and out of patient rooms?
- In a post-COVID-19 world, how will visitors' temperatures be scanned?
- Is there a concierge team to direct visitors on how to get to the right places as quickly as possible?
- Who monitors where visitors are going?
- Are free golf cart rides being provided to shuttle visitors from the parking lot to the entrance? Can two-way radios improve this process?
- Is there call box technology in the parking lots that enable instantaneous voice communications with hospital security?
- Overall, what's being done to improve the visitor experience so visitors come back when sick?



When it comes to protecting the safety and security of hospital staff and management, consider:

- What is the access control plan for staff and management?
- What goes into a lock-down during an emergency?
- Who is monitoring which hospital staff and management are in the hallways?
- Can Al-/analytics-driven incident management software be used to identify safety problems, such as persistent slip and fall accidents that are happening repeatedly in the same location?
- Can Al-/analytics-driven incident management software be used to identify security anomalies, such as an abandoned backpack?
- What can be done to rapidly identify and address violent patient behaviors?
- When there is an incident, how do you get the message out instantaneously using voice / mass communications technology?

#### What Goes Into Complying With Facility and Departmental Fire and Safety Policies

We started by identifying what goes into a safe and secure hospital environment. Also, we looked at key safety and security considerations for patients, visitors, and hospital staff and management. Next, let's look at how to comply with facility and departmental fire and safety policies in your hospital.

When it comes to how a hospital addresses fire and safety policies, there are two broad categories of regulations that come into play: the National Fire Protection Act (NFPA) and the Agency for Healthcare Administration (AHCA).

Enforced by the local fire marshall, the authority having jurisdiction (AHJ), the NFPA is a national code which both state and local governments can amend or add on to the code.

The NFPA, for example, addresses areas such as:

- The survivability of wiring during a fire
- Firewalls, the fire-resistant barriers that help prevent the spread of fires (not to be confused with IT-related firewalls used to secure a computer network)
- The permitting process around Bi-Directional Amplifier Systems (BDA's) that boost signals within the building to improve in-building radio frequency (RF) signal coverage
- Distributed Antenna Systems (DAS's) that convert analog RF signals into digital signals for distribution through fiber-optic or Ethernet cabling
- How first responders can use their radio systems within hospital buildings (public safety radio system coverage within hospital buildings)



The ACHA, on the other hand, deals less with construction and communications technology, and more with healthcare-related regulations.

For example, ACHA covers:

- Whether a hospital or medical center is ready to open and able to get a Certificate of Occupancy (CO)
- Cleaning and housekeeping regulations
- Emergency public safety communications

#### What Can Be Done to Improve Response Time



Like teams in most hospitals, hospital facilities and security staff work in environments where every second counts.

When it's critical to get the right resources to the right locations, instant team communication becomes a vital tool.

For example, when a patient is in the back of an ambulance on their way to the ER, with the right communications tools, the first responders can connect and communicate with the ER team. This way, the ER team can be mobilized and waiting when the ambulance and the critical patient arrive.

In order to improve response time, there needs to be a way to recognize that this situation exists, diagnose the actual problem, and measure response time.

Many hospital facilities and security teams tap into technology solutions such as video analytics and access control. For example, the staff at a control center can pre-open doors for urgent response because of an incident.

## How Facilities Directors Think About Budgeting and Evaluating Costs vs. Benefits

Most hospitals are frequently faced with the challenge of how to get the most out of their existing resources and how to do more with less.

With that in mind, how do facilities directors think about budgeting? And what goes into balancing the costs versus the benefits?

After all, your team may have ten items on its wishlist. But with a limited budget, you may be asked to prioritize four of these items.

Although much of this eBook looks at the challenges surrounding Creating Safe and Secure Hospital Environments for both facilities and security teams, as a starting point, it's important to recognize that the facilities budget is different from the security budget.

At a high level, facilities directors think about budgeting for both OpEx (operational expenses) and CapEx (capital expenditures).

Common OpEx for hospital facilities may include budgeting for calibrating test equipment or a radio maintenance agreement. These areas typically involve a fixed monthly expense and are planned based on having some idea of usage needs and trends.

Common CapEx for hospital facilities may include buying new X-ray machines or putting a new roof on a building.

Many common hospital facilities' needs could have both an OpEx and CapEx component as is common when budgeting for voice communications.

As a hospital facilities director works on their budget, with an eye towards modernizing the toolkit to create safe and secure hospital environments, while improving physical security, think about how your team may use:

- Analytics
- Artificial intelligence (AI)
- Incident management
- Mass notifications

It's also very common when budgeting to also consider your framework for evaluating the costs of a new initiative vs. its benefits.

For example, a dispatch center requiring eight hours per day of weekday coverage needs five staff members. That same dispatch center may be staffed at six staff members on weekends based on the assumption that weekends are busier. But are weekends actually busier at your hospital?

To know, rather than guess, the right kind of technology investments allow you to monitor your team's utilization rates. This way, you can become more agile scheduling for days, timeslots, and shifts. Then, you'll be able to approach your counterparts in finance and HR with data-driven arguments for additional headcount.

The big picture bears in mind that fewer staff members are needed to watch monitors when a hospital invests in technology that supports triggers and analytics. This may not sound like a big deal on the surface.

However, if your hospital runs eight-hour shifts, three times a day, and you have four to five shifts of people total, better technology could eliminate one position per shift, or five people, which frees up \$300,000 to \$400,000 a year in savings.

One final note on budgeting:

On the compliance side, when it comes to video, the ONVIF standard now allows IP-based products to work within your surveillance video framework. This interoperability protects your existing investment and seamlessly interfaces with other key technology platforms that improve the safety and security of your hospital.

## How Facilities' Needs Vary Across Different Departments Within a Larger Hospital



Hospital facilities teams support just about every other department of the hospital as their internal customers, because just about all teams need access to various facilities.

However, the facility's needs can vary quite widely among different departments.

For example, hospital admissions would usually have different facilities needs than the ER. An ER counts on facilities to provide its structure, generator power, battery backup power, plumbing, and HVAC, among other areas.

Another area that sometimes involves facilities, but many times is the hospital's own emergency services department, which is often overlooked, is interfacility transport. This is the hospital-owned internal ambulance service that handles driving between campuses.

As an emerging trend impacting facilities teams, there's a shift away from huge hospitals when real estate is at a premium. In this model, a large hospital in a region is constructed with freestanding ER's or urgent care centers built closer to where patients live and work.

These local satellite locations generally don't perform elective surgery, operate more like a small community hospital, and offer a faster in/out experience for patients.

#### What Can Be Done to Improve Operational Efficiency and Communication Between Staff Members

As you've seen throughout this eBook, in order to create safe and secure hospital environments, technology - and more specifically, wireless communication - provides an essential building block for improving physical security.

We started out by examining the differences between how facilities teams and securities teams help a hospital become safer and more secure. Then we turned our attention to the safety and security needs of patients, visitors, and staff, as well as compliance requirements for facility and departmental fire and safety policies.

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Most facilities leaders know that they need radios to enable one-to-many communications. This technology provides low latency and is much faster to use than typing on a keyboard with a chat messaging app. You simply push a button and you have one-to-many communication between staff members. We also introduced best practices for improving response time, budgeting, and serving internal customers in various departments throughout the hospital.

What else can be done to create safe and secure hospital environments?

The answer is: focus on operational efficiency and communication between staff members.



Most facilities leaders know that they need radios to enable one-to-many communications. This technology provides low latency and is much faster to use than typing on a keyboard with a chat messaging app. You simply push a button and you have one-to-many communication between staff members.

Facilities managers should also be thinking about Citizens Broadband Radio Service (CBRS), which provides benefits similar to WiFi but over the FCC-regulated frequency spectrum.

The idea behind CBRS, and its appeal to hospitals, is to provide more bandwidth and better coverage than WiFi, with fewer needs for access points (AP's) and network infrastructure.

The Motorola Solutions Nitro platform uses CBRS technology and can be acquired by hospitals either as OpEx or CapEx. With CBRS, every device requires a SIM card and authentication, similar to a private cell network.

So a hospital facilities team, working in conjunction with its IT team, runs these devices on their internal local area network (LAN) with SIM card devices. In this kind of environment, IT teams will use a Service Set Identifier (SSID) to segment visitor and patient WiFi access as secure from WiFi access used by hospital staff.

In order for two-way radios to work over that kind of infrastructure, all devices need a private SIM card, beyond their standard SIM card. As CBRS becomes more pervasive, expect to see more dual-SIM phones and tablets where you can use more than one cell network for redundancy.

### How Wireless Communications Improves Physical Security For Hospitals

Now that you've been introduced to technology that allows you to improve operational efficiency and communication between staff members, the final section of this eBook looks briefly at how wireless communications improve your hospital's physical security.

There are two categories of wireless communications to consider regarding these needs:

- Wireless communications that help patients, visitors, and staff
- · Wireless communications for the facility itself

For patients, visitors, and staff, the go-to wireless communications technology centers around one-to-many communications.

This can address both "I need help" situations, in particular locations within the hospital, as well as emergency situations with instantaneous needs and life-or-death consequences.

With this kind of wireless technology, the orange button on the device can immediately send an emergency alert to dispatch, even if your team member is partially incapacitated.

Besides people in the facility, physical security also takes into account the facility and its equipment.

For example, if a piece of equipment, such as an IV infusion pump or ventilator, malfunctions or fails, wireless communications technology can immediately send out an alert that helps get replacement equipment to the right location in the hospital as rapidly as possible.



#### **The Bottom Line**

Facilities and security professionals at hospitals face a lot of interrelated challenges around communications, monitoring, and response time.

However, these same teams need to cover a lot of ground (literally) with limited resources, in environments where the complexity and responsibilities seem to escalate dramatically with each passing year.

Besides staying on top of the safety and security needs of patients, visitors, and staff, there are national, statewide, and local compliance requirements driven by the National Fire Protection Act (NFPA) and the Agency for Healthcare Administration (AHCA).

This eBook also introduced you to strategies for improving response time, budgeting for OpEx (operational expenses) and CapEx (capital expenditures), and evaluating the costs versus benefits of a planned wireless communications investment. You also saw how needs vary across different departments.

Then, in the final two sections of this eBook, you learned about the technology that improves operational efficiency and communication between staff members, as well as the overall physical security of the hospital, both from the standpoint of people and the facility itself.

It's our sincere hope that you utilize this content as both a framework for *Creating Safe and Secure Hospital Environments*, as well as a conversation-starter for more productive conversations with other key stakeholders that you interact with at your hospital.

#### **About the Authors**



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Since 2007, Chas has been President of EMCI-Wireless (a Motorola channel partner) where he manages day-to-day financial operations and administrative functions of running a Motorola Two-Way Radio Dealer and Motorola Service Shop.

He has led a sales and marketing team for Motorola Solutions Professional & Commercial Radio (PCR), and has directed, organized, and facilitated a service team of System Technologists for Motorola Solutions PCR markets and government/public safety segments in Florida.

A market-leading telecommunications company, EMCI-Wireless is an Elite Specialist, Motorola's highest classification for channel partners. In addition, EMCI-Wireless is a 2019 Empower Circle winner which awards the top 100 partners around the Globe for Motorola Solutions.



#### Mike Humphress, President Commsult Performance Solutions

With 30 years of experience in direct sales, sales management, marketing, business development, and distribution management, Mike Humphress is a recognized innovator in the wireless industry. His employment with Motorola included the positions of Sales Representative, Regional Sales Manager, and Area Business Manager. In addition, he has spent six years in two Motorola dealerships in the capacity of Vice President and General Manager.

As the founder of Commsult, Mike is the company's primary consultant and master instructor. He spearheaded Commsult's twenty-five-year relationship with Motorola, including the development and delivery of their sales management and marketing curriculum for their channel partners and consultation on their distribution and channel management strategies.

## **Take the Next Step**

Do you work on, or lead, a facilities or security team at a hospital?

Do you need to improve your hospital's safety and security, especially with how it uses wireless communications, but you're not quite sure where to start?

Are you curious about how other hospitals are using wireless communications to create safer and more secure environments and improve physical security?

#### Schedule Your Free Two-Way Radio Consultation with a Hospital Wireless Communications Expert

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