



*Integrate. Automate. Communicate.*

# Six Ways Leading Hospitals Use Unified Communications to Improve Patient Care, Safety, and Satisfaction

## Enabling Care, Safety, and Efficiency Through Unified Communications

Mary, a patient at your hospital, wears a heart monitor. Her physician sets up a communications alert to ensure he is notified if it goes off. At 10 p.m. it does. The nurse on duty is notified immediately on an in-house wireless telephone and quickly assists Mary. But the doctor needs to be alerted, too. The technology behind the scenes instantly checks the communication rules regarding whom to contact, where, and on what device. The system indicates that Mary's doctor left the hospital at 9 p.m., so an urgent message goes to his smartphone instead of his onsite pager. If it's not read quickly, a text-to-speech message is sent to his home phone. If unanswered, the contact center agent is notified and the message is escalated to another on-call physician.

Sound futuristic? It isn't. Because everyone is mobile and everyone has *at least* one communications device, reaching the right person in a time of critical need can be a complex process. Technology with intelligence is key to patient care, safety, and satisfaction—as well as optimized workflow and staff efficiency.

## Unified Communications: It's All About Managing the Details

The potential of communications has expanded beyond the realm of simply making a connection between two people in static locations. In healthcare, a myriad of clinical, safety, and other communication systems constantly generates updates, alerts, and key pieces of information. This is in addition to your staff's ongoing need to connect directly with one another to collaborate on patient care. But unless the right data is gathered and delivered to the right person, at the right time, on the right communications device, it's useless. People and technology now need to communicate flawlessly to speed response times and keep safety and satisfaction in the forefront.

Given this vast amount of information, the way your organization communicates needs to change every minute—but seamlessly and behind the scenes—in order to rally the right caregivers to help patients. Doctors go in and out of surgery and staffing assignments change around the clock. So when a patient comes to the emergency department with heart attack symptoms in the middle of the night, are you quickly gathering all the right people when the code STEMI is called? Patients' lives depend on the coordination and management of details like this.

## What Is Unified Communications?

Unified communications is a term that can mean different things to different people. In this paper, we're referring to intelligent connections made among the many systems you may already have in place at your hospital. Unified communications enable hospitals to transform information sharing by automating and streamlining the way people, devices, and systems interact. The goal is to optimize workflows in new ways that improve staff efficiency as well as patient care, safety, and satisfaction.

## Healthcare Isn't Like Other Industries When It Comes to Communications

Given the serious nature of their role, hospitals need to approach communications differently from other industries. Because of this, a different type of communications infrastructure is required.

Why is this? Consider the following:

- **Communications can mean life and death:** First and foremost, communications are mission-critical in a hospital. We are not talking about a message going to voicemail or someone missing a meeting. Lives are on the line.
- **Highly mobile workforce:** Doctors, nurses, and other healthcare workers are always on the go. They spend the majority of their time delivering care and not bound to a desk phone or computer.
- **Dynamic and complex directory:** Patient information is transitory, and doctors may or may not be employed by your hospital, so creating an accurate directory that is continuously updated is a challenge.
- **Emphasis on paging/messaging to a variety of endpoints:** In healthcare, there is certainly a large emphasis on paging and other types of mobile messaging. This is actually becoming more complex with an ever-widening variety of communication endpoints, particularly smartphones.
- **More data from machines and systems (nurse call, patient monitoring, etc.):** Hospitals have more data coming from machines and systems than most organizations. You have significant potential to redefine workflows within your facility by delivering this data directly to mobile staff on the devices they carry.
- **Frequent group communications:** Group communications in healthcare are also prevalent. Examples include crash teams and those involved in various codes who need to be notified quickly. Notifications may have to go to roles rather than a named individual. An example of this would be the on-call cardiologist receiving an alert instead of Dr. Smith the cardiologist, who may not be on call.
- **Traceability/audit trail is essential:** Traceability of everything that happened during a time-critical situation is of utmost importance, so a full audit trail is required.

# The Six Ways Leading Hospitals Use Unified Communications to Improve Patient Care, Safety, and Satisfaction

Given the clear need for accurate, streamlined communications, below are the ways your hospital can leverage today's unified communications capabilities to improve your patient care, safety, and satisfaction.

## THE SIX WAYS

- Dramatically reduce the time needed to rally code teams (e.g., code STEMIs)
- Respond quickly to unexpected situations
- Speed response times to patient requests and a myriad of other alarm and update-driven situations
- Reach the right people at the right time on their preferred devices—including smartphones—for all communications
- Automate contact center communications to provide a foundation for efficiency and improved information sharing
- Automate everyday workflows to improve efficiency

### 1. DRAMATICALLY REDUCE THE TIME NEEDED TO RALLY CODE TEAMS (E.G., CODE STEMIS)

Every day your hospital carries out time-critical communication processes. Perhaps every hour. From code blues, to code STEMIs, to code pinks and beyond, hospitals are in the business of providing care with speed and safety in mind. But many hospitals struggle to reach all the right people quickly and efficiently when codes are called. Agents often use inefficient phone trees and outdated contact information. Or, they're unsure of which device to use to contact each person. A pager? Smartphone? In-house wireless phone? Cell phone? And if the anesthesiologist doesn't acknowledge the alert, many times the escalation is clumsy. Problems like these greatly affect patient care and safety, as well as the satisfaction of your staff regarding the way communications are handled.

The key is unified communications, which allow you to quickly assemble the right team by contacting the appropriate people instantly and simultaneously on the right devices. The ability to send them instructions and receive their responses regarding availability is also key, so others can be contacted if they cannot arrive in time.

For example, many leading healthcare organizations have advised a 90-minute door-to-balloon time for treating heart attack patients. A seamless approach to communication is essential for this. Consider these scenarios:

**Without unified communications:** The code STEMI is kicked off with the manual calling of the 20-30 people involved throughout the hospital, requiring them to report immediately for duty. It could take 20 minutes to call all the right people. And what if the cardiologist isn't available, how quickly can the next person in line be found? How do agents determine who is on call—and is that list updated with the right staff? Most importantly, is the hospital taking care of the patient as quickly as possible, shaving precious minutes off the door-to-balloon time?

**With unified communications:** Hospitals that rely on unified communications automatically rally the right people with extreme speed to significantly cut the door-to-balloon time. The 20-30 code STEMI team members are simultaneously and instantly notified on the appropriate device as soon as the code call is launched. Two-way communication enables team member response to be monitored, with automatic escalations built in if someone is unavailable. This greatly streamlines the process and reduces stress and confusion for everyone involved, improving response time for the patient.

— **Case in Point: Goshen General Hospital (Goshen, Indiana) Cuts Door-to-Balloon Time**

Goshen's door-to-balloon time was averaging 129 minutes for patients who arrived with heart attacks. One of the reasons it took this long was that contacting the 30 necessary personnel during the code STEMI was a manual process that required agents to reach some staff members by phone and others by pager. The team implemented several measures, including a mass notification/incident management solution that enabled documented two-way communication and escalation to other staff members as appropriate. The team at Goshen ultimately reduced its door-to-balloon time to 68 minutes. Now, the ER secretary uses the software to initiate the code to notify all 30 people simultaneously with specific instructions based on their role, and the team is able to provide much faster care.

— **Case in Point: A Large West-Coast Hospital Saves Children**

One well-known hospital on the West Coast was struggling with a serious problem. Incorrect patient information, communication delays, and disconnected processes were leading to trouble in the neonatal intensive care unit. The hospital found a system that leverages real-time information to speed communication and allow staff members to react quickly in times of crisis. The result has been a 21 percent reduction in pediatric mortality, which means the hospital is able to save two children each month with linked emergency procedures and plans.

## 2. RESPOND QUICKLY TO UNEXPECTED SITUATIONS

Outside of the need to respond to code calls, the unexpected often occurs in hospitals and their surrounding areas. For example, emergencies such as medical problems, thefts, fires, or any other type of safety concern can happen to visiting family members, staff, and others in the building. Likewise, nearby accidents, weather concerns, or any type of disaster can impact the typical workflows at your hospital.

For external local emergencies, the efficiency with which your facility can accommodate the influx of patients on short notice is critical. These situations could include weather-related incidents, traffic disasters, or large-scale illness (such as H1N1 outbreaks). The ability to bring in additional staff through effective communications is key.

For internal emergencies, many hospital security teams incorrectly assume that those on the premises will dial 0 in the event of an emergency, when they often dial 911. Reassure staff, patients, and guests that your organization is taking the ethical and legal steps to help maintain a safe environment by having the right procedures and systems in place. It's key to use enhanced 911 to direct emergency personnel to a caller's exact location (building, floor, and room) to ensure fast response. Onsite security can receive real-time notification of 911 events, allowing them to direct first responders, assist with traffic, or help protect others in the area.

### **Case in Point: A Large Chicago-Area Hospital Speeds Inbound Emergency Patients**

In 2003, a third-story porch in the Chicago metro area collapsed onto the porch below, killing 12 people. The hospital communication center was quickly overwhelmed by the volume of calls. The process of contacting all necessary emergency personnel took two hours. Based on this experience, the hospital implemented the technology to automatically notify the proper emergency personnel for any type of event, along with one or more notification methods, such as pager, email, fax, print, or phone call. They were able to specify the order in which people should be contacted, the amount of time to wait, and the designated individuals to contact. The system supported a host of flexible options for automated response processing, escalation and status processing, and reporting.

A short time later, a derailed commuter train injured 152 people. The hospital was able to use its system to reach the trauma teams quickly, compressing its communication processes by 88 percent to about 15 minutes. This required virtually no work on the part of contact center personnel.

### 3. SPEED RESPONSE TIMES TO PATIENT REQUESTS AND A MYRIAD OF OTHER ALARM AND UPDATE-DRIVEN SITUATIONS

Many hospitals today face the same challenge. Everyone agrees that quality and speed of patient care are essential. Yet, the highly mobile staffs at most healthcare facilities often cannot provide the best care possible due to poor communications procedures. This happens when there are too many undirected updates and alerts being sent to clinicians and other staff members, making it difficult to determine what to act on first. One patient's lab results have come in. Another is reporting pain through the nurse call system. A third's heart monitor is beeping. Someone wants to speak with a doctor. The security system is acting up. The list goes on.

Sending patient requests, critical alerts, alarms, and updates directly to the right staff member's mobile device is key to speeding response times. Prioritization for staff is essential, as is the ability to send messages to the right recipients based on their role (e.g., the communication should go to the on-call cardiologist). Intelligent middleware connects critical information from your alert systems, such as nurse call, fire, security, patient monitoring, and building management, to mobile staff on their wireless communication devices. These mobile event notification middleware systems should be "vendor neutral," allowing you to connect a myriad of systems, regardless of the manufacturer. The middleware creates an enterprise-wide hub for the management, prioritization, and response to key events. This includes the ability to send messages to the right people based on rules set up in your hospital, including escalated communications whenever necessary. It also means you can manage devices easily and allocate staff appropriately.

#### — **Case in Point: Coffs Harbour Hospital (Coffs Harbour, NSW, Australia) Improves Response Times**

This forward-looking hospital in New South Wales, Australia, has become a model in the area for its innovative use of messaging technology and integration of critical alert and monitoring systems with wireless telephony. The team's mobile event notification system sends alerts regarding medical emergencies, duress, nurse call, fire, and building management directly to the proper staff member carrying a mobile phone. Since implementing the system, Coffs Harbour has increased its number of mobile phones from 150 to 400 and now processes about 5,000 messages daily. Results include fewer trips around the unit for nurses and fast response to alerts affecting patient care and safety.

#### 4. REACH THE RIGHT PEOPLE AT THE RIGHT TIME ON THEIR PREFERRED DEVICES—INCLUDING SMARTPHONES—FOR ALL COMMUNICATIONS

Regardless of whether your staff members carry cell phones, smartphones, in-house wireless phones, or any number of different types of pagers, the communications intended for them have to be transmitted and received quickly to ensure patient care and safety. This means there should be no confusion regarding which device the message's sender should be using as the contact point. Unfortunately, confusion is common when highly mobile caregivers and administrators carry multiple devices.

Many hospitals have implemented easily updated Web-based staff directories and on-call schedules to alleviate this problem. Others are investigating changes in the devices their staff members carry and are looking to consolidate messaging with smartphones. According to Manhattan Research, an estimated 63 percent of physicians currently use smartphones, with that number expected to reach 81 percent by 2012.<sup>1</sup> Although pagers will likely always play some role in hospital communications, many hospitals have begun to seek pager replacement solutions—and found them in smartphones.

Today's smartphones and other mobile devices have brought with them new possibilities, but also new challenges in healthcare. Physicians, nurses, and administrators often carry these devices in addition to one or more pagers and an in-house wireless telephone. It's become too cumbersome for staff members and IT teams alike. For many, the time has come to trade in the 'tool belt' of devices in favor of a single smartphone for everything from code calls and consult requests to personal communications.

Consolidation generates benefits and cost savings for everyone involved. Clinicians and administrators can carry a single, highly reliable device and reduce confusion over which device is the appropriate one for contact purposes. IT support teams can reduce costs and maintenance headaches as fewer devices and coverage plans are required. Patients also benefit because response times are often faster and care is more coordinated.

##### **Case in Point: Inova Health System (Northern Virginia) Improves Messaging With Smartphones**

Inova, a family of five hospitals in Northern Virginia, had begun to standardize on the BlackBerry® for communications. The hospital saw a number of clinical, IT, and administrative staff members who needed to carry this new device in addition to the standard pagers they'd been carrying for years. While the BlackBerry was preferred for the functionality it could offer through email, SMS messaging, Web browsing and other applications, traditional pager-type communications were still vital. This hospital system sought a solution which would enable them to slowly move away from pagers and consolidate to the BlackBerry, their device of choice. Today the staff uses smartphone messaging to enable interactive page-style messaging with BlackBerry users. The application provides users with a message audit trail, which includes confirmation of delivery to the smartphone, as well as free-form text responses.

<sup>1</sup> Manhattan Research study, "Physicians in 2010: The Outlook for On Demand, Mobile, and Social Digital Media." Quoted in American Medical News online article "Smartphone use published by hospitals": <http://www.ama-assn.org/amednews/2009/10/26/bica1026.htm>

## 5. AUTOMATE CONTACT CENTER COMMUNICATIONS TO PROVIDE A FOUNDATION FOR EFFICIENCY AND IMPROVED INFORMATION SHARING

Successful organizations understand that, more than just an administrative or sales support function, the contact center carries the lifeblood of the entire organization—information. In the case of healthcare facilities, where a misunderstood direction or accidental disconnection can result in injury or even death, the importance of prompt, accurate communication cannot be underestimated. When a code blue occurs, hospital teams expect the correct responders to be notified and the relevant procedures to be activated. When a distraught relative calls in looking for a patient, the sound of the agent rifling through a stack of papers or tapping out a lengthy keyboard sequence does not instill confidence—nor is it likely to improve that customer relationship.

Contact centers which leverage unified communications have an invaluable foundation on which to add a variety of tools for automation and streamlined workflow processes. These include Web-based on-call schedules, self-service patient/employee directories, and speech-recognition systems that help callers navigate the organization through voice prompts versus agent assistance. Having a common database for all of these systems provides a “single source of the truth” and the accuracy necessary to handle communications properly the first time around.

In addition to traditional call-handling functions, a contact center staff can also coordinate and track the appropriate response to various alarm types throughout your facilities. These can include systems mentioned previously in item three, such as security alerts, fire alarms, building management systems, HVAC concerns, and many more. Alarms generated by these systems can be configured to display on agents’ screens, allowing them to quickly dispatch appropriate resources to address the issue. Centralized tracking of each event and the subsequent response is essential for proper follow-through.

Along with the substantial boost in contact center productivity, a unified communications approach can reveal innovative new ways to generate income and offer convenient services for your hospital and staff. This can include providing quality after-hours answering services to your internal staff of physicians as well as physicians from private practices and smaller clinics. Likewise, your contact center can leverage existing infrastructure and personnel to enable physicians consult tracking and follow-up to help outside patients/physicians connect with internal contacts.

Finally, as rising healthcare costs continue to be an issue, an increasing number of large, multi-facility healthcare networks are reducing their communications overhead by consolidating multiple communication centers into a single facility. The implementation of technology that automates call handling and improves personnel productivity throughout an organization results in significant cost reduction and enhanced customer service. A single contact center results in a more unified, consistent approach to mission-critical communications, improved efficiency, and major cost savings because of reduced staffing requirements.

— **Case in Point: East Texas Medical Center (Tyler, Texas) Streamlines Its Contact Center Operations**

The East Texas Medical Center Regional Healthcare System (ETMC) is a seamless system of primary, secondary, and tertiary healthcare facilities and services throughout East Texas. Although the contact center was in an automatic call distribution (ACD) environment, directory services were being managed using paper directory listings and manual search methods. This labor-intensive method resulted in extended average call handling times and new staff training lengths that were unacceptable. With advanced contact center technology, ETMC created a centralized operation that supports multiple facilities and product lines and provides after-hours call functionality. Within weeks of implementing the system, average call handling times decreased significantly and successful call completions increased. ETMC also has an enterprise-wide directory source updated with a single edit. The centralization of critical hospital knowledge has decreased the investment in time and dollars required to train new staff members—a significant improvement over the outdated paper system.

## 6. AUTOMATE EVERYDAY WORKFLOWS TO IMPROVE EFFICIENCIES

Oftentimes, everyday processes become time-consuming because workflows are not designed properly or they don't include the proper tools. For example, staffing shortages in nursing units are a common occurrence. Yet, finding out at the last minute that nurses are unavailable for their scheduled shifts typically sets off an inefficient communications process that all-too-busy nurses have little time to carry out. This typically means one or more nurses must look up and try to contact off-duty staff to ensure proper coverage on the floor. At many facilities, this time-intensive process means patient care suffers, and staff satisfaction dwindles.

Unified communications once again come in handy in the form of automated messages sent simultaneously to off-duty nurses. These communications can include message templates with the appropriate requests, as well as response tracking as nurses respond to the notification. Instead of being tied to the nursing station, the staff carrying out this task simply sends the message and is alerted when responses are logged.

— **Case in Point: A Large Midwestern Hospital Addresses Staffing Shortages With Ease**

A well-known hospital in the Midwest was having difficulty dealing with daily nursing staff shortages. Twenty-eight nurses were spending 30 minutes each day calling for replacements. This diminished the time nurses had for direct patient care. After evaluating the options, the hospital implemented a notification solution that automatically sends messages and escalates them if primary contacts are unavailable. Now the software contacts off-duty nurses who touch one button to respond with their availability.

## CONCLUSION

Most hospitals share similar goals: improve quality of care and patient safety; improve patient satisfaction; and reduce costs and inefficiency. Achieving these goals requires a unified communications approach to sharing information among the people, systems, and devices in your organization. With the advanced communications requirements hospitals face, the right behind-the-scenes technology is the only way to protect patients and help your staff redefine workflows in a way that makes everyone feel better.

Key Ways to Use Unified Communications	Resulting Improvements in Care and Efficiency
Dramatically reduce the time needed to rally code teams (e.g., code STEMI)	<ul style="list-style-type: none"><li>Notify the right staff simultaneously on the right devices</li><li>Simplify response tracking and escalation while speeding response to patient needs and other concerns with two-way feedback</li></ul>
Respond quickly to unexpected situations	<ul style="list-style-type: none"><li>Provide assistance whenever required not only for patients and staff, but also to family members and others visiting your facility</li><li>Give onsite security the tools to coordinate care with first responders</li></ul>
Speed response times to patient requests and a myriad of other alarm and update-driven situations	<ul style="list-style-type: none"><li>Assist patients faster by integrating nurse call notifications with nurses' wireless devices</li><li>Alert only the appropriate staff members, reducing confusion and extraneous communications</li></ul>
Reach the right people at the right time on their preferred devices—including smartphones—for all communications	<ul style="list-style-type: none"><li>Eliminate confusion over which device should be used for messages, speeding patient care</li><li>Incorporate caregivers' device preferences into your communications strategy</li><li>Consolidate the various types of devices carried by each staff member with a single smartphone</li></ul>
Automate contact center communications to provide a foundation for efficiency and improved information sharing	<ul style="list-style-type: none"><li>Eliminate redundant effort and streamline call handling</li><li>Provide consistent service for callers</li><li>Manage centralized response to security and building alarms, fixing potentially dangerous issues before they become serious problems</li></ul>
Automate everyday workflows to improve efficiency	<ul style="list-style-type: none"><li>Eliminate the need for nurses to spend time filling shifts, giving them more time to work with patients</li></ul>

## About Amcom Software

Amcom Software connects people to each other and to the data they need. This helps organizations that depend on speed, accuracy, and productivity save lives, improve efficiency, and enhance effectiveness. Amcom Software's unified communications technologies include solutions for contact centers, emergency management, mobile event notification, and paging infrastructure. The company's products are used by leading organizations in healthcare, hospitality, education, business, and government. By continually developing its industry-leading technologies and making strategic acquisitions, Amcom Software has rapidly grown and solidified its market leadership.



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