A Holistic Approach for Effective/Cost-effective Life-Safety Solutions in Healthcare Environments

A White Paper by SimplexGrinnell
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These are challenging times for healthcare administrators and facilities teams as they strive to do more with less—fulfilling the all-important patient-care mission, focusing on the bottom line, and at the same time creating the safest and most secure physical environment. If responsibility for life-safety solutions falls onto your shoulders, you probably know that a silo approach to solution components such as fire detection, fire sprinkler, fire suppression, emergency communications, video surveillance, intrusion detection, electronic access control, nurse call, personnel location, wander prevention, and infant protection can pose hurdles for day-to-day operations and make it more difficult to achieve high-quality response and coordination during emergencies. An emergency that is not handled appropriately can have serious consequences, potentially resulting in negative publicity, lower Press Ganey scores, and adverse business outcomes—fewer patients, greater staff turnover, and higher insurance costs.

With some types of emergencies on the rise in healthcare facilities, inadequate or poor coordination can be increasingly perilous. Take violence in hospitals for example. According to a 2011 hospital security survey conducted for Health Facilities Management (HFM) and the American Society for Healthcare Engineering (ASHE), violence in hospitals is on the rise1. Twenty-three percent of hospitals reported an overall increase in attacks and assaults in the previous year. Thirty-four percent reported a rise in patient and family violence against emergency department staff, and 29 percent reported a higher incidence of patient and family violence against other staff. More than one in 10 ED nurses surveyed in 2010 said they had been attacked in the previous week. The study also cites government statistics from 2003 to 2007 that report nearly 60 percent of all nonfatal assaults and violent acts in U.S. workplace settings occurred in the healthcare and social assistance industry.

Lessons learned from Fort Hood, to Virginia Tech, to the challenges New Orleans healthcare institutions faced in the aftermath of Hurricane Katrina show that coordinated responses to such emergencies can help prevent injury and loss of life—and that coordination is improved by integrating life-safety solution components such as those shown in Figure 1.

This white paper presents ideas to help you plan and implement holistic life-safety solutions that can cost-effectively serve the needs of your organization. It also describes how working with a primary partner can help optimize your overall life-safety and property protection program. A holistic approach to life safety can strengthen your institution’s long-term health and sustainability by promoting patient and staff safety and satisfaction, maintaining patient and staff loyalty, and controlling operating costs such as those associated with insurance, system maintenance, and regulatory compliance.

Focus on the Big Picture

If you are like many of your peers, you probably spend a good deal of time ensuring that smoke detectors, sprinklers, security, and communications systems operate properly. This tactical work can leave you with less time to focus on creating and implementing a roadmap for long-term patient and staff safety, emergency preparedness and management, patient and staff satisfaction, and facilities life-cycle management. Making time to focus on the big picture can empower you to define and implement life-safety solutions that best meet your organization’s ongoing needs.

By thoughtfully defining your comprehensive needs and working closely with vendors and service providers, you can mastermind solutions that integrate both technically and organizationally to create an interlocking web of protection for your patients, staff, and facilities. This integration can take a number of forms and yield an array of benefits.

Integration for Cost and Organizational Efficiency: Integration of multiple solution components can result in cost savings. For example, when advanced technologies are employed and fire protection and security solutions are integrated so they can be managed from a central command center, you may be able to operate your life-safety program with fewer dedicated staff members, less hardware (e.g., fewer management consoles), and less real estate.

To ensure that you and your staff are able to maintain focus on the long-term best interests of your patients and staff, your solution components should incorporate system intelligence that frees you from reactive system attention and oversight. An example is technology that can predictively determine when specific smoke detectors are approaching the point where they need to be cleaned. This information can be used to plan the cleaning at an appropriate and opportune time—long before the detector becomes dirty enough to trigger a nuisance alarm. This effort should result in staff and operational efficiencies that reap cost benefits, such as fewer and more efficient vendor site visits, fewer fire department response calls, less disruption to patients and personnel, and increased system uptime.

Integration for Better Emergency Response: At all times—but especially during emergencies—it is critical to share information across systems and across functional groups. You should

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define solution interoperability requirements to reflect the needs of your environment. For example, it may be useful to share information across security, fire, electronic access control, and video surveillance solutions. Likewise, nursing executives may find patient safety is best protected by sharing information across nurse call, wireless pagers or phones, staff location, and/or infant protection solutions.

It is smart to consolidate multiple information sources into an integrated emergency communication solution that includes such components as interior voice-enabled fire alarm systems, outdoor speaker systems, emergency call stations, text messaging, and visual messaging devices. These communication solutions can warn and direct people to take shelter, relocate, or evacuate. As circumstances dictate, a common message can be transmitted to all targeted areas or area-specific messaging can be delivered based on the threat type and location.

Sharing information across systems can enable your staff to receive relevant critical information quickly in a crisis, communicate across functional groups, and create a clear directive for action. Integration of this sort can help ensure coordinated, all-threat responses across internal departments such as security, facilities management, safety management, nursing, and information technology—and with outside first responders such as law enforcement and fire services. It also supports effective emergency communication with the general public.

Let’s examine a situation in which a hospital’s fire alarm, access control, and video surveillance systems are integrated. If a visitor activates a fire alarm pull station in a general visitor area, that signal will be sent to the hospital’s command center. The hospital’s public safety officer can then apply response criteria to quickly assess how best to respond. Command center personnel can identify who activated the station, determine if the call is legitimate, and share video surveillance information with police. In addition, police officers on patrol can transmit video back to the command center to provide an even more comprehensive view. Command center personnel can communicate appropriately with staff, patients, and the public to direct next actions in order to protect people and property and help ensure the hospital continues to meet patient needs despite the disruption.

Use Codes and Standards as a Planning and Process Tool

As part of your job, you devote much time and energy to maintaining compliance with regulations set by accreditation organizations like The Joint Commission, DNV, or HFAP—and to ensuring compliance with NFPA codes and UL safety standards. Successful compliance supports your organization’s ability to deliver high-quality patient care and helps provide greater safety and security for patients, staff, and visitors. It also protects your organization’s reputation for quality, which is essential to ongoing business health. Although compliance-related work can seem like a never-ending to-do list, it also presents an opportunity to use compliance as a tool to develop and implement best practices that will improve your systems, operations, and processes.

For example, in response to the rise in hospital violence, The Joint Commission, hospital industry groups, federal and state regulators, and hospital employee unions are working to ensure that regulations reflect the need to protect hospital patients and staff from violence. The International Association for Healthcare Security and Safety (IAHSS) recently released comprehensive new guidelines for optimizing security in the construction and renovation of health care facilities. Efforts to protect against hospital violence include such actions as the deployment of fundamental and integrated security system solutions—from wireless, multifunction panic buttons for nurses to sophisticated video surveillance systems that can detect and deter violent situations. Looking to regulations and guidelines for planning and process guidance can help you continually improve your life-safety systems and processes to protect against evolving threats to people and property.

To support best practices, consider teaming with a qualified life-safety partner that can help you develop and execute a plan that promotes compliance, addresses your needs efficiently, and fosters staff productivity.

Keep Up with Advanced Technologies and Services

Many healthcare organizations are unaware of advanced capabilities that can address their institutions’ growing need for better protection, greater simplicity and efficiency, improved cost management, and easier code and regulatory compliance and documentation. If you are not employing these technologies, you are likely missing out on ways to better protect and serve your organization. Along with focusing on the big picture, you should take the time to educate yourself about the latest advances.

The types of ongoing technological advances you should know about include:

- **Extended system integration for communications.** Consider the importance of reliable communication in promoting efficiency and safety. There are three primary communication threads: patient-to-staff, staff-to-staff, and staff-to-outside world. With nurse call and alarm management at the hub, wireless phones, pagers, voice activated devices, and other media all provide a means of generating and receiving critical information for the appropriate staff. Whether it’s a call for help from a patient, a staff attack notification from a nurse, or a security breach notification from the nursery, advanced communications solutions allow the right personnel to be notified of alarms and fulfill their responsibilities by taking appropriate action. With the advent of IP-based solutions, VoIP, and more hospital equipment capable of wireless signal output, it’s important to understand the value of integration and how it can lower life-cycle costs and maximize the efficiency of seemingly disparate systems.

- **Remote diagnostics for fire safety and security solutions.** Technological Intelligence is continually being added to life-safety solutions to make it easier to remotely monitor and manage solution components. This intelligence can allow a life-safety provider to essentially watch your system for you – seven days a week, 24 hours a day. With remote diagnostics, the provider notifies you when there’s a trouble condition on your system and can proactively identify detectors that need to be cleaned. The diagnostics enable the provider to diagnose the problem remotely and determine whether a site visit is necessary. If a service call is needed, the technician comes equipped with an understanding of the problem, the appropriate solution, and the parts to fix it on the first visit. Over the course of a year, this can result in

2 http://iahss.org/About/Guidelines-Preview.asp
considerable cost savings, added operational efficiency, and improved immunity to nuisance alarms.

- **Real-time web-based compliance management tools.**
  An emerging generation of web-based tools can automatically aggregate information needed to support your compliance efforts for The Joint Commission and other regulatory agencies. Not only can such tools save time and money spent generating reports to support compliance, they can also provide an efficient online means to mine your own data to detect important trends. This trend data can help you benchmark how well your organization is performing and identify areas for improvement.

For example, electronic inspection reporting can capture bar code information from each fire and/or security alarm device inspected, and capture inspection test results for each device. All of this information can then be automatically aggregated and compiled into a report that is emailed to pre-designated recipients. Such reports can be designed to comply with reporting standards such as those documented in The Joint Commission’s Environment of Care document.

**Form a Primary Life-Safety Solution Provider Partnership**

Healthcare environments have become more complex, and that trend is expected to continue. For example, a “healthcare facility” is often a campus with many buildings, multiple systems, and a variety of specialized needs—from parking garage emergency call boxes, card readers, carbon monoxide detection, emergency lighting and exit signage monitoring, and video surveillance to emergency power source monitoring, nurse call systems, and sophisticated fire suppression systems for areas with hazardous materials like compressed gases. These increasingly complex environments demand increasingly sophisticated solutions.

This makes do-it-yourself life-safety management much more demanding and risky. There are often multiple vendors to coordinate, schedule, escort, and oversee, which means more paperwork to process, organize, and maintain. As complexity increases, so do the risks of inadequate coordination of vendors and internal resources. Important tasks or responsibilities may fall between the cracks, and problems of accountability and finger-pointing among vendors can burgeon.

To address these challenges, it is advisable to consider forming a strong working relationship with a primary partner that understands your business and your environment. A capable, knowledgeable partner can take a consultative approach to managing your life-safety and communications needs and focus on delivering the right customized solution. A primary partner with the right capabilities, resources and technologies can help you create a stronger protection program and gain the benefits of greater control, accountability, and simplified management.

In such a relationship, you can take advantage of smart new automated tools, such as a secure web portal to facilitate vendor communication and electronic inspection reporting to facilitate code and regulatory compliance. Electronic inspection can provide up-to-date record keeping with a comprehensive audit trail of inspections and detailed inspection and deficiency reports. A high-caliber partner may also be able to provide additional capabilities like remote diagnostics that help to proactively identify potential issues and resolve problems more efficiently.

All of this can bring added value to your life-safety operations. And there are economic advantages, as well. Working with a primary life-safety partner can reduce costs associated with managing multiple vendors and enable your institution to achieve operational efficiencies as systems are integrated and responsibilities consolidated.

By providing comprehensive documentation, paperwork and reporting for life-safety systems, a qualified life-safety partner can also help you manage the documentation requirements of National Electric Code (NEC), NFPA, and Underwriters Laboratories (UL) standards as well as The Joint Commission, DNV, or HFAP accreditation.

**Conclusions**

Your healthcare organization can be well served by adopting a holistic approach to planning, implementing, and integrating the right life-safety solution. Such an approach requires continuous focus on the big picture and is enhanced by using compliance with codes and standards as a tool to implement best practices. Pay careful attention to new advances and integrate these technologies into your life-safety program when they make strategic and economic sense for your business. Finally, consider the benefits of partnering with a primary solution provider with whom you can share responsibility for managing your life-safety solutions. In the end, this can help you more effectively and efficiently meet the ever-changing set of life-safety challenges.

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