

Healthcare Life Safety Compliance



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Life safety

Vary your fire drills because surveyors will be checking

by A.J. Plunkett (aplunkett@decisionhealth.com)

Vary the start time of your quarterly fire drills by at least an hour on each shift because surveyors will be checking.

And beware of establishing a pattern of scheduling drills because both The Joint Commission (TJC) and the [Healthcare Facilities Accreditation Program](#) (HFAP), now operating under the Accreditation Commission for Health Care (ACHC), have cited hospitals for problems.

CMS inspectors also regularly check fire drill logs.

During Executive Briefings in September, **Herman A. McKenzie, MBA, CHSP**, director of engineering for TJC's Standards Interpretation Group, said to expect more information on fire drill expectations in 2022, but emphasized that drills are expected to vary by at least an hour each time.

There is a new fire drill matrix on TJC's Connect Extranet to help accredited organizations log times and responses, he said, and to track when the drills are held.

Under Environment of Care standard EC.02.03.03, element of performance (EP) 1, fire drills are required "once per shift per quarter in each building defined as a health care occupancy by the Life Safety Code."

Under EP 3, "when quarterly fire drills are required, they are unannounced and held at unexpected times and under varying conditions."

The concern in recent citations, according to the American Society for Health Care Engineering's [Health Facilities Management magazine](#) in August 2020, is that hospitals are not varying the times enough, thereby allowing hospital staff to discern a pattern and anticipate when a fire drill will happen.

In another [article in September 2021](#), authors **Joshua Brackett, PE, SASHE, CHFM**, and **Derek Watson**, both with Banner Health, explained the concerns:

"All of the requirements that are implemented, such as every three months, plus or minus 10 days, per shift, and must vary greater than an hour, etc., are intentional and methodical to help ensure that the drills remain planned and purposeful. Drills should never be a 'check the box' mentality. In any

fire, seconds matter. In a hospital fire where patients are incapable of self-preservation and staff is directly responsible for the patient's safety and care, the seconds matter even more.”

The American Society for Health Care Engineering (ASHE) has updated its fire drill matrix so that drills will be highlighted when they don't meet the requirement for varying more than an hour or when they don't vary often enough.

ASHE members can download that matrix here: <https://www.hfmmagazine.com/articles/3990-hospital-fire-drill-matrix-assists-code-compliance>. Look for the inset resource box that says Fire Drill Matrix Tool. ■

Update

Update on your newsletter subscription

As an Accreditation & Quality Compliance Center member, you know that each week we strive to deliver timely news, in-depth analysis, and actionable guidance in all our newsletters, including our two flagship publications, *Inside Accreditation & Quality* and *Healthcare Safety Leader*.

Effective with our February issues, we are transitioning to online-only delivery of this valued content and discontinuing email/mail delivery of your newsletter via full-color PDF. But don't worry – we will continue to provide detailed coverage of topics critical to your role within hospital compliance.

You will still have access to every article, in every issue, but now you can pick and choose exactly which of these articles you would like to view and print. You can either print individual articles or wait until the end of the month to create a printable PDF of that month's issue of the newsletter. This change allows us to focus more resources on what matters most – providing breaking industry news alerts, best practice strategies, and updated tools on patient safety and quality compliance.

If you have any questions please feel free to contact us by phone at (800) 650-6787 or by email at customerservice@hcpro.com. Thank you for being a member of our Accreditation & Quality Compliance Center community – we value your commitment to patient safety and quality healthcare!

Executive Briefing

Smoke barriers, blocked fire extinguishers continue to be problematic

by A.J. Plunkett (aplunkett@decisionhealth.com)

Develop a protocol for any above-ceiling work, schedule weekly inspections of eyewash stations, and ensure that fire extinguishers are not blocked.

Those actions might steer you clear of common deficiencies found by surveyors from The Joint Commission (TJC), said **Herman A. McKenzie, MBA, CHSP**, director of engineering for TJC's Standards Interpretation Group during the accreditor's 2021 Executive Briefing.

The briefing was the first held by TJC since the start of the COVID-19 pandemic and took place virtually over three days in mid-September.

Seven of the top 10 most challenging standards across all TJC categories were Environment of Care (EC) or Life Safety (LS) standards. This ranking covers the period from January 2020, just before the COVID-19 public health emergency was declared, through the end of August 2021.

Here is a rundown of the other four most challenging EC and LS standards in the overall top 10.

LS.02.01.10, EP 14

Element of performance (EP) 14 of this Life Safety standard requires pipes, conduits, cables, wires, air ducts, or other penetrations of walls and floors to be protected with “approved fire-rated materials.”

That does not include polyurethane expanding foam.

While you and your experienced facility staff may understand the standard requirements, too often contractors and others may not, said McKenzie.

Do periodic rounds and ensure staff and contractors are sealing openings appropriately after construction or other work, he said. It's important to develop above-ceiling protocols since that area is hard to keep track of, he advised.

EC.02.02.01, EP 5

This standard requires hospitals to minimize risks associated with “selecting, storing, transporting, using and disposing of hazardous chemicals.”

Most citations under this EP are because eyewash stations were not checked regularly or were not avail-

able when “injurious corrosive could splash.”

When chemicals are being used that are less than 2 or greater than 11.5 on the pH scale, you must have an eyewash station, noted McKenzie. And it must offer tepid water, between 60 and 100 degrees Fahrenheit.

Schedule weekly inspections to verify the stations are working properly, he said.

For more on eyewash stations, reference the American National Standards Institute’s ANSI/ISEA Z358.1-2014: Emergency Eyewash and Shower Standard.

LS.02.01.35, EP 14

This EP requires hospitals to meet “all other Life Safety Code automatic extinguishing requirements related to NFPA 101-2012.”

The deficiencies cited here are most often because fire extinguishers are blocked with clutter, said McKenzie.

Linen carts must be moved, and shelving cannot be put where the fire extinguishers are mounted, he said. Educate staff on the requirement and do periodic rounds.

There is no longer a requirement for environmental rounds, said McKenzie, but they remain a best practice.

As you do them, he said, an excellent habit is to “look up and down, left and right.” When you find a problem, “do on-the-spot education.”

EC.02.05.01, EP 9

Under this, hospitals are required to label utility system controls “to facilitate partial or complete emergency shutdowns.”

McKenzie brought special attention to the two notes under this EP, which give examples of the controls that should be labeled as well as an example of how the fire alarm circuit should be clearly marked in red.

Unlabeled electrical breakers and electrical fire alarm circuits that are not marked in red are common problems.

Ensure the breakers are properly labeled after project work or after adding circuits, and require the fire alarm contractor to identify circuits, he said.

On rounds, look especially for breakers that are marked as spares but are in the open position, noted McKenzie. “That is an RFI,” he said. “Usually if it’s open, it goes to something.” And that means it’s no longer a spare.

Survey preparation tips

As you get ready for survey, McKenzie recommended four things:

- **Get organized.** Gather the required documents and make sure they are organized.
- **Complete your documentation.** Don’t give a surveyor a reason to ask a question. Have the documents updated and ready to go.
- **Don’t overshare.** Don’t provide a surveyor more information than is requested.
- **Understand what’s needed.** Read the standards and EPs and understand the requirements. Often facility managers will say, “I hear The Joint Commission requires this or that,” noted McKenzie. And maybe TJC used to, but if you ask a surveyor “show me the EP,” they should be able to do so, he said.

Also, be aware that surveyors may issue an IOU for documentation that isn’t ready at the time it is requested, but they will establish a clear deadline for when it must be produced, he said.

TJC often receives clarifications on disputed Requirements for Improvement based on late submissions of documentation. “These cannot be accepted,” said McKenzie. ■

Emergency preparedness

Insight in preparedness for healthcare facilities

By James D. Ferris, PE, and Aaron Johnson, PE, LEED AP BD+C

The advent of the COVID-19 pandemic in 2020 brought the need for emergency preparedness in hospitals and medical facilities to the forefront of nearly every discussion in the industry. Today, with the delta variant fueling another surge in cases across the United States, the challenges continue. With different rules and regulations in every state, the protocols for controlling the virus vary depending on the hospital system.

Because utility infrastructure impacts every area of hospital operations, from the day a new hospital is opened and for many decades to come, it is important to understand key decision drivers when developing emergency preparedness plans.

Here, we will analyze several of the key drivers of hospital/medical facility planning and design required

to meet future needs—including the need for energy efficiency, an understanding of available redundancy, and a comparison of first costs versus life cycle costs.

Energy efficiency

Hospitals and medical facilities face a number of challenges in achieving their desired energy efficiency. Having flexible systems capable of accommodating normal operations and expending the energy required for emergency conditions, such as a pandemic mode, is key.

From a wellness standpoint, the goal is to have the flexibility to conserve energy year-round in normal operational circumstances, but also have the ability to easily pivot to a system that provides improved air quality based on the needs of the current environment and the level of protection necessary for staff.

For example, the air quality and exhaust needs for COVID-19 are different from those for other airborne illnesses. There are greater precautions needed for staff safety and comfort—whether that involves introducing or increasing the fresh air intake from outside, or augmenting existing ventilation systems.

According to calculations from the U.S. Environmental Protection Agency (EPA)'s Energy Star program, hospitals consume more than 315 gallons of water per bed every day and the average U.S. hospital consumes 103,600 Btu of natural gas per square foot annually. In addition, lighting, water heating, and space heating account for more than 65% of the energy consumption.

The EPA estimates that every \$1 a nonprofit healthcare organization saves on energy equals generating \$20 in new revenues for hospitals (or \$10 for medical offices). Therefore, investing and focusing on energy-efficient utility infrastructure systems can help healthcare organizations fund emergency preparedness programs from savings generated through improved energy performance.

A building that functions more efficiently has greater run times and higher performance in the event of a power outage. A comparison between energy use in an efficient versus a less efficient building often will show that the efficient facility can function 40%–50% longer on the same gallon of fuel used by an emergency generator. Energy savings have an immediate and direct impact on the reduction of operating costs.

One of the simplest ways for owners to optimize

spending is to review their energy utility bills. Often, such bills are expedited—sent to accounting and paid. However, even a cursory analysis from an expert often can unearth potential gaps in efficiency, such as a valve left open or a water leak, simply by comparing the way the utility data is trending.

Understanding available redundancy

Hospitals are required by code and CMS regulation to ensure critical power supply and infrastructure system functionality. As a result, healthcare leaders aim to build utility infrastructure redundancy into projects—whether new construction, additions, or renovations.

If not engineered appropriately, addition or renovation projects can chip away at original redundancy levels and negatively impact operations. Maintaining redundancy consistent with the capacity for available growth is the best approach to optimize potential. For example, having a higher equipment load than necessary could create a risk of overload, but in some ways, wasting available energy is almost worse.

In the case of a 50% load, some unused energy could be applied to functions that do not have a high energy demand, such as TVs in patient rooms. These are not critical to operations, but they help keep patients calm and occupied during an emergency event, relieving the burden of care from staff and allowing them to address the situation with fewer distractions.

Whether it is redundant sources of power or redundant equipment, healthcare leaders must understand the available redundancy as well as the associated risk.

One of the most often misunderstood factors is the risk (i.e., a facility's level of risk due to not having full redundancy in one of the major components). For example, a facility may have a boiler system that operates with natural gas alone. The system has six boilers when only five are needed, making one redundant.

In this case, the risk is the facility does not have a redundant fuel source for the boiler. This, in turn, begs the question, "What if something happens to the natural gas main and shuts down hospital operations?" Essentially, this facility has redundancy as far as having the ability to take a boiler down for servicing, but it does not have redundancy in regard to the overall fuel source—which, if lost, would force crucial hospital operations to shut down.

Facility leadership aims to know, appreciate, and understand the need for available, multilevel redundancy in planning for preparedness. Hospitals can consider conducting a campuswide utility master plan assessment to accurately calculate available redundancies and ensure sufficient backup capacity to maintain operations in an emergency situation.

Part of preparedness planning is carefully considering interrelated possibilities: “What would happen if something went wrong with each system?” In one example, a hospital had two separate emergency systems, but with such interrelated redundancy, those systems nearly canceled each other out. Operating rooms were on system A and prep/recovery rooms were on system B, and when the hospital took a critical look at how it would operate in an emergency, it realized a failure in either system would render it incapable of performing surgery.

Another facility color-coded a patient floor to show how five generators were backing up different parts of the treatment area, with connections interspersed throughout the floor. The interrelated analysis showed that it would be difficult to manage operational risk because an outage in any one of the generators would affect the entire floor.

First costs vs. life cycle costs

Many hospital leaders understandably focus on construction costs. However, project teams need to enable them to also consider what will be spent over the estimated 50-year (or longer) life of the building.

All too often, project teams do not provide decision-makers with such data. As a result, many project decisions are based on first costs rather than life cycle costs because decision-makers have not been provided information to factor the intrinsic value of “future proofing” spaces.

The reverse should be standard practice. For example, in the planning of greenfield hospitals, leaders could consider installing larger medical gas pipes that can accommodate four times as much as typically required. Why? This allows the hospitals to easily upgrade med/surg floors to isolation rooms, or accommodate for specific needs, at a fraction of the overall construction cost. The COVID-19 pandemic has shown how a large concentration of a specific type of illness can affect medical gas needs—in this case, oxygen. During COVID-19 surges in patient population,

facilities have seen oxygen usage 10–15 times higher than normal.

Prioritizing expenditures based on short- and long-term ROI is an important part of the decision-making process. Glass windows are a good example as they don’t get replaced very often, especially in hospitals. Therefore, investing in premium-quality windows can pay dividends for up to 50 years, whereas a chiller or an air handling unit is only going to last 15–20 years at best.

Aspects such as the building envelope and structure, as well as site orientation, are long-term strategies and investments that make a significant difference in costs over the life cycle of the building. Just as there is an optimal traffic flow into and out of the site, there also is an optimal flow of energy in terms of exposure to the elements. Neither can be ignored. Optimizing these decisions will be passively advantageous, regardless of what systems are used inside the building.

The pandemic has heightened the awareness and importance of such flexibility, which is leading decision-makers to take a life cycle analysis approach to resiliency decisions.

Many leaders now are enduring costs due to the pandemic as decision-makers strategize how to retrofit their projects to optimize safety. For example, one of the shifts is upgrading HVAC systems with controllable flexibility within rooms and throughout entire floors.

Some items that had traditionally been on the “wish list” have come to the forefront as necessities in the COVID-19 era. They include sophisticated air handling systems that change the airflow on demand to such an extent that an entire floor can become a negative suite.

Utility infrastructure is crucial to ongoing hospital operations, making these issues—energy efficiency, an understanding of available redundancy, and a comparison of first costs versus life cycle costs—critical in the development of an emergency preparedness plan. ■

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Survey readiness

First time in facilities compliance? Here's some tips from experts

by A.J. Plunkett (aplunkett@decisionhealth.com)

The first time in any job can be hard, but learning the ins and outs of survey compliance in facilities management—with standards on top of regulations on top of local requirements on top of state requirements—can be overwhelming.

We asked some experienced survey and safety experts what advice they'd offer to first-timers. And as with most any job in hospitals, the first thing is to spend awhile understanding the standards and the requirements, as well as the sections of the brick and mortar you are overseeing.

Learn the standards

“It will take time to get a handle on all the different aspects of safety that may now fall under your supervision,” advises **Marge McFarlane, PhD, MT(ASCP), CHFM, CHSP, CJCP, HEM, MEP**, with Superior Performance Consultants in LaPointe, Wisconsin.

“Take time to familiarize yourself with the standards and regulations. That will be the best way to know if what is currently in place meets the intent of the standards and regulations,” she says.

Knowing the standards and requirements is key to a successful survey or inspection. Too often, new safety officers don't know there is a standard for something, or they might not know what needs to happen to show compliance, McFarlane says. “And they may not know how to sustain compliance after a citation.”

There's a lot of information that already exists for you to stand on and to learn from, say McFarlane and **Ernest E. Allen, ARM, CSP, CPHRM, CHFM**, a life safety consultant with HealthTechS3 and a former TJC life safety surveyor.

“Learn the facility. Review current floor plans and past accreditation surveys, insurance surveys, and fire inspections,” says Allen.

“As you tour your new hospital, introduce yourself,” he says. “[But] be aware that not all information provided to you by individuals in other departments may be correct. Sometimes they will leave out important details.”

Also review past safety committee minutes to familiarize yourself with past issues and whether they were successfully resolved, Allen recommends.

By reading past safety committee minutes, says McFarlane, “you will better understand the safety culture.”

Look to see if the minutes are divided under headings like “issue, discussion, action/assigned responsibility. If many items are labeled ‘information’ or there are many issues without closure, then you might know that the process for safety performance improvement may not be in place,” notes McFarlane.

“I also look at who has been designated to be on the committee and how often they attend,” she says.

What not to do

A common mistake first-time facility safety and compliance officers make is agreeing to correct all the problems employees report to them, says Allen. Here's a better answer: Say you will investigate the problem and get back to the employee later. That way you can make sure you're getting all the right information.

“For example, nursing may blame facility staff for something that is not true. They may not follow the proper procedure, which leads to an issue with reliability of equipment,” Allen says.

You should also avoid comparing one facility to another. Don't say “this is how I did it at another location” until you understand how the current safety culture operates.

And don't get caught up in technical details, recommended The Joint Commission (TJC) director of engineering, **Herman A. McKenzie, MBA, CHSP**, when he wrote [a blog post](#) with advice for new facilities managers.

There is a natural tendency to immediately focus on the details of daily repair requests, construction projects, and other infrastructure initiatives, he wrote.

“Rather than getting bogged down in operational or technical details, the best facilities managers are leaders. They create an environment in which staff can improve their competencies,” wrote McKenzie.

Take advantage of available resources

Become familiar with the online resources available to you.

For example, TJC has the Connect Extranet, a “secure platform for accredited and certified organizations to access all accreditation/certification related materials,” according to the accrediting organization.

That includes “official accreditation/certification reports, official Joint Commission communications, and access to valuable resources and tools, along with other items.”

The current or outgoing compliance manager or your TJC client liaison should be able to show you how to access the Connect Extranet, which is password protected. Among other things, the Connect Extranet is where you will be looking for your survey report once surveyors are finished, including the requirements for improvement. It’s also where you’ll post your corrective plan, find updates to security administration, and access the monthly online newsletter *Perspectives*, which is TJC’s main communication tool.

If you’re not one already, become a member of the American Society for Health Care Engineering (ASHE), recommends Allen. As a member, you can review their daily blogs and attend webinars and seminars held by local ASHE chapters.

The National Fire Protection Association (NFPA) also has many online resources, says Allen.

While *Perspectives* is available to accredited hospitals through the Extranet, TJC’s *EC News* is by paid subscription but focuses solely on facilities issues. ■

Cybersecurity

Securing healthcare data: Protecting mainframes during COVID and beyond

By Matt Phillion

Even pre-pandemic, hospitals were prime targets for hackers and other online threats. That condition has only grown worse over the past 18 months, with vaccine infrastructure becoming a tempting target for bad actors in addition to hospital systems’ continuing vulnerability to ransomware attacks.

Hospitals and other healthcare organizations must look for new ways to secure their data, but one area in their IT infrastructure is often overlooked: mainframe security. **Ray Overby**, co-founder and CTO of Key

Resources, Inc., says that while the current healthcare environment has brought attention to the cybersecurity threats facing healthcare organizations, mainframes still fly under the radar. Mainframes are used to manage sensitive patient information, which means their security should be a top priority when it comes to staying compliant with HIPAA and other data regulators.

The challenges surrounding healthcare organization mainframes aren’t new, Overby says. They’re the same old problems, amplified and left unaddressed.

An overlooked part of the system

“Most of the people who look after mainframes these days are not experienced mainframe people,” says Overby. Moreover, there’s a pervading belief that mainframes can be managed with fewer people and less investment, which is not the case, he says.

“Every computer system requires due diligence,” says Overby. “You can’t be proactive about protecting your mainframe if you’re waiting for the phone to ring—you’re already behind the curve. And you’re only as secure as your weakest link.”

It only takes one weak link to open a window into your network, he says. Once that happens, it’s only a matter of time before hackers can get access to all kinds of things, including the mainframe.

“I stress to people all the time that you have to be proactive. One of the things I do is vulnerability analysis, looking for configuration vulnerabilities, if your security is out of date, and I look at the status of your patch management,” says Overby.

It’s a matter of asking the right questions: is the system configured properly? Has it been changed, either accidentally or maliciously? The system needs to be scanned continuously for new vulnerabilities or active threats.

“We talk about how the mainframe has integrity, and what we’re talking about is the controls, ensuring that they can’t be bypassed by end users,” says Overby. “Ensuring not just anyone can go into the root and manage those systems.”

One of the challenges with mainframe security, however, is that it’s not often publicly discussed because of privacy concerns. “The mainframe industry doesn’t report vulnerabilities,” says Overby. “The stuff I do, you never see it on the 5 o’clock news. But mainframes have vulnerabilities just like everything else.”

CISOs and C-level executives need to understand exactly what is required in terms of addressing those vulnerabilities. For example, Overby notes, they should realize the importance of a mainframe architect. “I run into major organizations who do not have a mainframe architect, or it’s a part-time job,” he says. “They often see it as a job where there’s not enough to do. And that only happens if you’re not doing your due diligence.”

Changes to the IT environment are happening faster and faster, with ever more fundamental security impacts. And yet mainframes aren’t mentioned in many organizations’ conversations about cybersecurity.

“If you used an ATM today, that transaction ran on a mainframe,” says Overby. “It does impact the overall system. It only takes one integrity vulnerability to compromise the entire box. Once [an attacker] is in that box, it doesn’t matter what the firewall is doing. Everything is interconnected.”

Everyone looks at the mainframe like a castle with a moat, he says. When talking to C-level executives, he may even hear about a policy to patch the mainframe software as little as possible.

Secrecy within the industry means that discretion prevents talking about successes in mainframe security as well. “It’s word of mouth,” says Overby. “The publicity side of it is really a disadvantage and creates an uphill battle for those trying to educate people.”

It’s not uncommon, Overby says, for organizations to strive simply to be more secure than the nearest competition in the hopes that hackers will go after them instead. “It’s a bad business practice. It’s not a matter of if, but when something happens,” says Overby. “Anyone with an internet presence is being attacked every day.”

Improving mainframe security

So how do we convince healthcare organizations to protect their mainframes and invest the necessary people and money into keeping them secure? In part, Overby says, the answer is education: overcoming the issue’s lack of publicity to get in front of the right executives, presenting them with the right scenarios and data to make them aware of the risks of overlooking their mainframes.

Once you’ve started down the road of better security, it will be important to improve configuration management and compliance checks, Overby says. “The mainframe environment is complicated as it is. It

requires automated processes,” he says. “You have to get to a place where you can run compliance checks often enough to get it to that proactive state. I talk to security professionals all the time, and I tell them you’ve got to assume the bad guys are in your network today.”

Of particular concern, he notes, is excessive access. “How can you protect something like client data if you don’t know who has access and you can’t keep track of it?” says Overby. “Part of excessive access is managing that, but you also need to have an understanding of who is supposed to have what level of access—who has been provisioned for access versus what access you think they should have.”

Policy and procedure should also grant access only to the people who absolutely need it, and only for defined purposes, Overby says.

KRI conducted a survey with Forester asking C-level executives responsible for making decisions about mainframes whether they involved security in those decisions. “Almost 70% said yes, security is involved, no brainer,” says Overby. “But [in terms of] how many people in this survey asked the mainframe people about decisions that affect the mainframe, 15% said they do. It didn’t make any sense. But part of the problem is they don’t have a mainframe security architect in the first place.”

Overby has found that often, the security architect for the mainframe is on the operations side of the equation, and so the prevailing philosophy is “if it’s not broke, don’t fix it.” But that’s not appropriate—a security architect needs to be an innovator of change.

However, the “conspiracy of silence,” as Overby calls it, both prevents the industry from talking about hacks when they occur and puts organizations in a tough spot when trying to proactively defend their mainframes.

Overall, the key is to perform due diligence on your mainframes, Overby says. “Do your job, be proactive, invest in the right tools, and make sure you have the right people,” he says.

It’s likely an organization is not looking at excessive access and other proactive measures to keep the mainframes safe, which should be done now.

“Attackers are getting in through the IP node in the refrigerator in the break room,” says Overby. “As we get more connected, it gets more difficult for security teams to keep up.”

The industry also needs to move past old beliefs about mainframe security. “Many CISOs honestly believe that mainframes are inherently secure and that they don’t have the vulnerabilities of other environments,” says Overby. “It is the most securable environment, but it’s being attacked every day. Don’t wait for the phone call.” ■

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COVID-19 IHI tool helps to identify gaps in patient surge preparedness

by A.J. Plunkett (aplunkett@decisionhealth.com)

If COVID-19 cases are rising in your area again and you’re seeking a fresh look at your pandemic response plan, download the free patient surge preparedness checklist by the Institute for Healthcare Improvement (IHI).

IHI’s “[Hospital Preparedness for a COVID-19 Surge: Assessment Tool](#)” offers a nine-page checklist of evidence-based items it has boiled down from resources and lessons learned from organizations such as CMS, the CDC, the American Hospital Association, the American Society for Health Care Engineering, Doctors Without Borders, and the New York state and Massachusetts departments of health, as well as a variety of hospitals and health systems from Boston to Texas.

The tool has been downloaded more than 1,700 times, according to the IHI.

Have your incident command or surge team go through each of the six sections of the assessment, which uses a yes-or-no format for evaluating your current surge capacity and process, and can help point to gaps, says **Mara Laderman, MSPH**, senior director of IHI’s innovation team.

The questions in each section focus on what Laderman says an “ideal state would look like” so that a facility can then focus on improvements, she says.

The first section on structure for planning, decision-making, and communication should set the tone for the rest of the assessment, she says.

Other sections evaluate your ability to monitor and improve your process as the patient load evolves during

a surge; your infection control preparedness and how you are using your space and supplies (see box at right); and staffing flexibilities.

The last section is one of the most important ones, notes Laderman, because it evaluates how your facility is handling staff mental health and well-being. The pandemic has taken a toll on staff as each surge rolls through the nation.

Equally important is the monitoring and improvement section, says Laderman. (See box below.)

As this pandemic has demonstrated, COVID-19 could be around for a while, and hospitals need to have a way to evaluate their performance and use that to plan for the next surge, she says.

The assessment was designed for use by the incident command leadership, she notes. However, it can’t hurt to also run it by others, such as members of your front-line clinical teams or other in-the-ranks staffers, who might be able to offer a different perspective on your hospital’s readiness.

“One thing we hope is that people go to the qualitative as well as quantitative,” says Laderman. “I think it’s a great idea to really engage different people—get a holistic view to more clearly identify gaps and prioritize improvements.”

IHI has a full library of online resources on healthcare improvement, as well as [resources specific to COVID-19](#).

Among those the organization recommends:

- [A Guide to Promoting Health Care Workforce Well-Being During and After the COVID-19 Pandemic](#)
- [Conversation Guide to Improve COVID-19 Vaccine Uptake](#)
- [How to Address Equity as Part of COVID-19 Incident Command](#)
- [How to Safely Restart Elective Surgeries After a COVID Spike](#)
- [COVID-19: Patient Safety and Quality Improvement Skills to Deploy During the Surge](#)
- [Virtual Learning Hour Special Series: Understanding and Addressing Sources of Caregiver Anxiety](#)

IHI also has just released a set of recommendations titled “[‘Psychological PPE:’ Promote Health Care Workforce Mental Health and Well-Being.](#)”

D. Space and Supplies

Space		Yes	No	Notes, Reflections, and Actions
1. Identified space in the ED, ICU, and other patient care areas for separation of known/suspected COVID patients (in the absence of space, create a system that allows patients to wait in a personal vehicle or outside the facility and be contacted by phone)				
2. Identified spaces with surge capacity capabilities				
3. A plan for allocating negative pressure rooms If yes, this plan includes:				
High-efficiency particulate air (HEPA) filters to convert regular rooms into ones with negative air pressure				
A plan to create more secure areas using other means (e.g., UV barriers) if all negative pressure rooms are in use				
Supplies and Personal Protective Equipment (PPE)				
1. A stable source of supplies				
2. At least eight weeks of essential patient care equipment (e.g., pumps, ventilators) and PPE (e.g., face and surgical masks, face shields, respirators, gowns, gloves, eye protection, hand sanitizer, disinfectant, body bags)				
3. Estimates of supplies to be shared with local, regional, and tribal planning groups to coordinate and plan				
4. A process to regularly calculate and transparently communicate the organization's daily PPE usage rate				
5. A contingency plan for decontamination, substitution, or reuse/extended use in case of supply shortages				
6. Equitable access to PPE across all employee groups				
7. A documented policy on use of supplies/PPE that staff purchase themselves If yes, this plan:				
Includes instructions on when it is appropriate for staff to use self-purchased PPE (e.g., during a shortage, when staff do not feel adequately protected by supplies provided by the hospital)				
This policy has been communicated to all staff				
There is a system to monitor adherence to the policy on staff-purchased PPE				

Section D of the IHI's "Hospital Preparedness for a COVID-19 Surge: Assessment Tool" assesses a facility's preparedness with space and supplies. The full tool can be found at www.ihl.org/resources/Pages/Tools/Hospital-Preparedness-for-COVID-19-Surge-Assessment-Tool.aspx.

(Used with permission from the [Institute of Healthcare Improvement](http://www.ihl.org).)

COVID-19

Report: Building a smarter healthcare facility

By Matt Phillion

There's nothing simple about running a healthcare facility. With complex moving parts creating an operationally challenging environment, hospitals can't afford to be inefficient or lag behind. How healthcare organizations use resources today is key to how they will evolve into the future.

The industry is undergoing a sea change. Healthcare was already working toward integrating systems for better interconnectivity and interoperability, and the COVID-19 pandemic amplified this initiative. Facilities old and new are striving to be more agile, tightly woven, and efficient. Organizations are looking to improve not just medical records, but physical operations as well, from HVAC to physical security and beyond.

But how can facility managers influence the monitoring, alignment, and management of these disparate systems? The pressure is on to move fast and increase efficiency as priorities shift during a global pandemic, even while backlogs of less-urgent procedures have slowed revenue.

A new report from Honeywell gives healthcare facility managers a chance to voice their thoughts and concerns after more than a year of weathering the pandemic. The report found that 94% of healthcare managers said remote management is important for operational efficiency. Only one in four respondents have such a system in place, but 26% said they plan on investing in this technology over the next year to 18 months.

The report, Rethinking Healthcare Facilities as Integrated Entities, looks at the challenges, concerns, and priorities of healthcare facility managers in the U.S., China, Germany, and Saudi Arabia. It's the fourth in a series of reports on healthcare building trends.

According to respondents, occupational safety also ranked high, with 95% saying robust life safety systems are important for providing value to occupants. Also rated over 90% were the following:

- Energy efficiency and sustainable solutions (94%)
- Improved indoor air quality (93%)
- Flexible spaces converted based on occupant needs (93%)

Returning to the topic of remote management, China and Saudi Arabia almost unanimously said remote management is important, both ranking it at 99%.

As mentioned, only 25% of respondents have remote management in place. Other areas that got the lowest percentage of responses included real-time location tracking of people and assets (26%), contactless building entry (33%), and aspirating smoke detection (34%).

The impact of COVID-19

COVID-19 has left its mark on nearly every aspect of healthcare, and certainly on the management of healthcare facilities.

“The last years [have] been very reactive, and COVID-19 has taught facility operators to be more agile,” said **Karen Langstaff**, chief of facility planning with St. Joseph’s Healthcare Center in Hamilton, Ontario, Canada. “Moving forward, we really need to share best practices, especially with all the new technology coming at us. If we collaborate and connect, we’ll be better able to sort out what will give us the best return on investment and what will really make a difference to our facilities and patients. We’ll also be in a better position to deal with whatever the next wave of the pandemic throws at us.”

According to the Honeywell report, COVID-19 has raised awareness of predictive maintenance analytics as a means to improve efficiency, cut costs, and reduce the risks of failures and downtime.

Only 30% of respondents have predictive maintenance analytics in place, but another 30% plan to implement them in the next 12–18 months. Also on the improvement list in that time frame:

- Air quality solutions (28%)
- Fire systems software providing greater insights (28%)
- Aspirating smoke detection (28%)

Additionally, of the five improvements respondents selected as most beneficial to occupants (reduced downtime, improved air quality, better prediction or identification of problems, improved occupational productivity, and better monitoring of efficiency), predictive maintenance contributes to four.

Growing interest in integrated capabilities

While managers clearly have the will to improve processes, the survey found that three in four respon-

dents struggle to secure the financial resources they need, especially with COVID-19 shutting down profitable procedures such as elective surgeries. And funding isn’t just a concern with improvements and upgrades—nearly as many (74%) said they worry about keeping up with growing capacity needs.

Additional top concerns include lockdown monitoring, backup system and redundancy preparedness, and air filtration and containment capture.

Respondents in the U.S. specifically voiced concerns about funding, with 84% listing it as their top concern.

Prioritizing need during, and after, a pandemic

Improving patient satisfaction, in spite of other challenges, remains top of mind for respondents, with 31% listing it as their top priority in the next 12–18 months. Improving efficiency was close on its heels at 29%, followed by improved occupant safety (26%), improved automation, efficiency, or sustainability (26%), improved fire and life safety systems (25%), and improved ability to access and act on information (25%).

Looking to the future, survey respondents noted that smart building, with integrated systems and analytics, is necessary to realize their goals for operational

Answers

1. True.
2. True.
3. False. You must have an eyewash station when the chemicals are being used that are less than 2 or greater than 11.5 on the pH scale.
4. False. The temperature must be between 60 and 100 degrees Fahrenheit.
5. True.
6. True.
7. True.
8. False. Seven of the top 10 most challenging standards across all TJC categories were Environment of Care (EC) or Life Safety (LS) standards.
9. False. This standard and EP requires pipes, conduits, cables, wires, air ducts, or other penetrations of walls and floors to be protected with “approved fire-rated materials.”
10. True.

efficiency improvements. Sixty-four percent of respondents said they were more willing to invest in smart building technologies now than before the pandemic.

All of these improvements tie together: 56% of respondents noted that, when planning for smart building, improving staff productivity and building operations should be at the forefront. Nearly as many (54%) put sustainable building energy use ahead of staff productivity and building operations.

Efficiency was pivotal to many respondents: 52% listed managing all building systems through a single platform as a top priority.

The rise of smart healthcare

All of these desired improvements add up to a smarter, more connected facility—and these types of facilities have been shown to improve patient care and clinical outcomes, lower healthcare-acquired infections, and increase overall efficiency. The more efficient the facility, the better staff are able to deal with patients and cases—and drive greater patient satisfaction.

The report calls out one specific case: Fiona Stanley Hospital in Perth, Australia. A new project, it ran into many of the same pitfalls as older healthcare facilities, with legacy systems getting in the way of achieving modern technical success.

The hospital, which spans four city blocks, integrated 65 individual systems into a single platform that connected 1,000 card readers, more than 300 closed-circuit cameras, and 200 intercoms in one interface. This wove monitoring and control, reporting, alarm management, and analysis into a single pane of glass—achieving the sort of integrated, smart facility survey respondents are looking for.

“Connected healthcare facilities have been shown to improve patient care, clinical outcomes, and operational efficiency,” said **Keith Fisher**, vice president, global services, Honeywell Building Technologies. “Increasing operational insight can help them optimize the use of their assets to avoid bottlenecks, cut waiting times, and upgrade the overall patient experience. Many of these goals can be achieved by upgrading an existing building management system without the need to rip and replace. This is important as facilities are increasingly expected to improve day-to-day outcomes and enhance efficiencies with little or no increase in budgets.”

Matt Phillion is a freelance writer covering healthcare, cybersecurity, and more. He can be reached at matthew.phillion@gmail.com. This story first appeared on www.psqh.com.



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Quiz (answers on page 11)

Use this quiz to test your understanding of articles, standards, and guidelines covered in this issue of **Healthcare Life Safety Compliance**, or as a discussion starter in your next employee or safety committee meeting.)

- Under EC.02.03.03, EP 1, fire drills are required “once per shift per quarter in each building defined as a health care occupancy by the Life Safety Code.”
True or False
- Under EC.02.03.03, EP 3, quarterly fire drills are required to be “unannounced and held at unexpected times and under varying conditions.”
True or False
- When chemicals are being used that are less than 5 or greater than 9.5 on the pH scale, you must have an eyewash station.
True or False
- The tepid water in the eyewash station must be between 70 to 110 degrees Fahrenheit.
- Hospitals consume more than 300 gallons of water per bed every day.
True or False
- The Honeywell report found that 94% of healthcare managers said remote management is important for operational efficiency.
True or False
- Only one in four respondents have a remote management system in place.
True or False
- Between January 2020 and August 2021, seven of the top 10 most challenging standards across all TJC categories were infection control (IC) standards.
True or False
- LS.02.01.10, EP 14, requires hospitals to minimize risks associated with “selecting, storing, transporting, using and disposing of hazardous chemicals.”
True or False
- EC.02.05.01, EP 9, requires hospitals to label utility system controls “to facilitate partial or complete emergency shutdowns.”
True or False

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