Joint Commission Resources
Quality & Safety Network
Resource Guide

Environment of Care: Life Safety Code Issues

October 25, 2012
About Joint Commission Resources

Joint Commission Resources (JCR) is a client-focused, expert resource for healthcare organizations. It partners with these organizations, providing consulting services, educational services and publications to assist in improving the quality, safety and efficiency of healthcare services, and to assist in meeting the accreditation standards of The Joint Commission. JCR is a subsidiary of The Joint Commission, but provides services independently and confidentially, disclosing no information about its clients to The Joint Commission or others. Visit our web site at: www.jcrinc.com.

Disclaimers

Joint Commission Resources educational programs and publications support, but are separate from, the accreditation activities of The Joint Commission. Attendees at Joint Commission Resources educational programs and purchasers of Joint Commission Resources publications receive no special consideration or treatment in, or confidential information about, the accreditation process.

The information in this Resource Guide has been compiled for educational purposes only and does not constitute any product, service, or process endorsement by The Joint Commission or organizations collaborating with The Joint Commission in the content of these programs.

NOTE: Interactivation Health Networks is the distributor of the Joint Commission Resources Quality & Safety Network series and has no influence on the content of the series.
# TABLE OF CONTENTS

Program Summary ................................................................................................................................................. 4
Continuing Education (CE) Credit .......................................................................................................................... 5
Program Outline ..................................................................................................................................................... 6
List of Referenced Standards .................................................................................................................................. 7
Tackling Top Challenging Standards ..................................................................................................................... 12
Tracing the Environment of Care ........................................................................................................................ 15
Code Red .............................................................................................................................................................. 18
Clarifications and Expectations: Super Suites ......................................................................................................... 22
Clarifications and Expectations: Managing Barrier Integrity .................................................................................. 25
Clarifications and Expectations: Managing Door Maintenance ........................................................................... 29
Clarifications and Expectations: Managing Corridor Clutter .............................................................................. 32
Appendix A: Faculty Biographies ........................................................................................................................ 38
Appendix B: Post-Test .......................................................................................................................................... 39
Appendix C: Resources and Related Information .............................................................................................. 41
Appendix D: Continuing Education Credit Information ....................................................................................... 42
Appendix E: Discipline Codes: Instructions ......................................................................................................... 43
Appendix F: JCR Quality & Safety Network Contact Information .......................................................................... 44
Program Summary

This page provides an overview of the program content and learning objectives. Please refer to the Table of Contents and Program Outline for a detailed list of the topics covered. The information included in this Resource Guide is intended to support but not duplicate the video presentation content. There may be additional information available online for this topic.

Program Description

The Joint Commission requires healthcare organizations to comply with the Life Safety Code® to help ensure fire safety. In the Life Safety Code, the National Fire Protection Association (NFPA) specifies construction and operational conditions to minimize fire hazards and provide a safety system in case of fire.

To help assess compliance with the Life Safety Code, The Joint Commission created the Life Safety (LS) chapter, which includes all The Joint Commission requirements regarding Life Safety Code compliance. The LS chapter applies to any organization or part of an organization that is considered a healthcare, ambulatory care, or residential occupancy.

Through walk-arounds of hospitals conducted by Joint Commission experts, this 60-minute activity examines challenging standards in the LS chapter, as well as the Environment of Care (EC) chapter, discusses strategies for meeting these standards, and provides advice on how to help comply with these standards.

Program Objectives

After completing this activity, the participant should be able to:

2. Discuss challenging EC standards and EPs.
3. Discuss proactive measures organizations can take in relation to the environment of care and life safety that help ensure a safe environment.

Target Audience

This activity is relevant to all organization staff, medical staff, volunteers, and contract staff responsible for life safety-related activities, including safety officers and committees, engineering staff, department managers and supervisors, performance improvement staff, training and education staff, and risk managers.
Continuing Education (CE) Credit

After viewing the JCR Quality & Safety Network presentation and reading this Resource Guide, please complete the required online CE/CME credit activities (test and feedback form). The test measures knowledge gained and/or provides a means of self-assessment on a specific topic. The feedback form provides us with valuable information regarding your thoughts on the activity’s quality and effectiveness.

NOTE: Effective April 1, 2012, the Learning Management System web site URL changed as noted below.

Prior to the Program Presentation Day
1. Login to the JCRQSN Learning Management System web site at http://twnlms.com/
2. Enroll yourself into the program
   Note: Your administrator may have already enrolled you in the program
   • Select All Courses from the courses menu.
   • Select the course category for the current year, 2012 Programs.
   • Select the course for this program, Environment of Care: Life Safety Code Issues
   • When prompted, choose Yes to confirm that you would like to enroll yourself.
3. Display and print the desire documents (Resource Guide, etc.).

Online Process for CE/CME Credit
1. Read the course materials and view the entire presentation.
2. Login to the JCRQSN Learning Management System web site at http://twnlms.com/
   Note: This assumes you have already been enrolled in the program as described above.
4. If you didn’t view the broadcast video presentation, view it online.
5. Complete the online post test.
   • You have up to three attempts to successfully complete the test with a minimum passing score of 80%.
   • Physicians must take the post test to obtain credit.
6. Complete the program feedback form.
7. On the top right corner of the main course page, you will see your completion status in the Status block.
8. Select Print Certificate from within the Status block to print your completion certificate.

Process for VA Knowledge Network Participants
1. Read the program’s Resource Guide and view the entire video presentation (speak with your administrator for broadcasting times – do NOT log in to view the program).
2. Complete the Viewer Response form (speak with your administrator to obtain a paper copy that will be completed manually – do NOT log in to take the online test).
3. Complete the Program Evaluation.
4. Record the answers to the post test where indicated on the Viewer Response form.
5. Return the Viewer Response form by the program due date listed in the upper left corner of the page.
   Forms received after this due date will not be eligible for CE credit.
6. Please allow 6 weeks for processing your Viewer Response Form.
* If you have any questions, please contact Joshua Smith at (562) 826-5505, extension 3962.
Program Outline

Environment of Care: Life Safety Code Issues
October 25, 2012

I. Introduction
   A. Program Content
   B. Objectives
   C. Faculty

II. Challenging Life Safety Issues
   A. Suites
   B. Corridors
   C. Life Safety Drawings
   D. Building Atriums

III. Challenging Environment of Care Issues
   A. Fire Pumps
   B. Emergency Power Systems

IV. Conclusion

V. Post-Program Live Question and Answer Session
   A. Audio only telephone seminar with program faculty – for 30 minutes following the program.
   B. Call 1-888-206-0090; enter conference code: 7925428.
   Or e-mail your questions or comments to: Questions@jcrqsn.com

<table>
<thead>
<tr>
<th>Program Broadcast Time</th>
<th>Eastern:</th>
<th>2:00 p.m. to 3:00 p.m.</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Central:</td>
<td>1:00 p.m. to 2:00 p.m.</td>
</tr>
<tr>
<td></td>
<td>Mountain:</td>
<td>12:00 p.m. to 1:00 p.m.</td>
</tr>
<tr>
<td></td>
<td>Pacific:</td>
<td>11:00 a.m. to 12:00 p.m.</td>
</tr>
</tbody>
</table>

During the live airing of this program on October 25, 2012, you may be able to talk directly with the faculty when prompted by the program’s host. After this date, your message will be forwarded to the appropriate personnel.

Immediately following the program, we invite you to join in a live discussion with the program presenters. Call 1-888-206-0090 and enter Conference Code: 7925428 to be included in the teleconference.

To submit your question ahead of time or for additional details, please send an e-mail to questions@jcrqsn.com. If you submit your questions after this date, your message will be forwarded to the appropriate personnel.

You can also receive answers to your questions by calling The Joint Commission’s Standards Interpretation Hotline at 630-792-5900, option 6.
List of Referenced Standards

NOTE: During this videoconference, a number of standards and elements of performance are discussed. For your reference, there is a list of these standards and EPs below. The list may not include all standards and EPs that are discussed.

EC.02.02.01
The hospital manages risks related to hazardous materials and waste.

EP 5
The hospital minimizes risks associated with selecting, handling, storing, transporting, using, and disposing of hazardous chemicals.

EC.02.05.05
The hospital inspects, tests, and maintains utility systems.
Note: At times, maintenance is performed by an external service. In these cases, hospitals are not required to possess maintenance documentation but must have access to such documentation during survey and as needed.

EP 5
The hospital inspects, tests, and maintains the following: Non-life-support utility system components on the inventory. These activities are documented. (See also EC.02.05.01, EPs 2-4.)

EC.02.03.05
The hospital maintains fire safety equipment and fire safety building features.
Note: This standard does not require hospitals to have the types of fire safety equipment and building features described below. However, if these types of equipment or features exist within the building, then the following maintenance, testing, and inspection requirements apply.

EP 6
For automatic sprinkler systems: Every week, the hospital tests fire pumps under no-flow conditions. The completion date of the tests is documented.
Note: For additional guidance on performing tests, see NFPA 25, 1998 edition.

EP 9
For automatic sprinkler systems: Every 12 months, the hospital tests main drains at system low point or at all system risers. The completion date of the tests is documented.
Note: For additional guidance on performing tests, see NFPA 25, 1998 edition (Section 9-2.6).

EP 10
For automatic sprinkler systems: Every quarter, the hospital inspects all fire department water supply connections. The completion dates of the inspections are documented.
Note: For additional guidance on performing tests, see NFPA 25, 1998 edition (Section 9-7.1).
EP 11
For automatic sprinkler systems: Every 12 months, the hospital tests fire pumps under flow. The completion date of the tests is documented.
Note: For additional guidance on performing tests, see NFPA 25, 1998 edition.

EP 13
Every 6 months, the hospital inspects any automatic fire-extinguishing systems in a kitchen. The completion dates of the inspections are documented.
Note 1: Discharge of the fire-extinguishing systems is not required.
Note 2: For additional guidance on performing inspections, see NFPA 96, 1998 edition.

EC.02.05.07
The hospital inspects, tests, and maintains emergency power systems.
Note: This standard does not require hospitals to have the types of emergency power equipment discussed below. However, if these types of equipment exist within the building, then the following maintenance, testing, and inspection requirements apply.

EP 4
Twelve times a year, at intervals of not less than 20 days and not more than 40 days, the hospital tests each emergency generator for at least 30 continuous minutes. The completion dates of the tests are documented.

EP 6
Twelve times a year, at intervals of not less than 20 days and not more than 40 days, the hospital tests all automatic transfer switches. The completion date of the tests is documented.

EC.02.05.09
The hospital inspects, tests, and maintains medical gas and vacuum systems.
Note: This standard does not require hospitals to have the medical gas and vacuum systems discussed below. However, if a hospital has these types of systems, then the following inspection, testing, and maintenance requirements apply.

EP 1
In time frames defined by the hospital, the hospital inspects, tests, and maintains critical components of piped medical gas systems, including master signal panels, area alarms, automatic pressure switches, shutoff valves, flexible connectors, and outlets. These activities are documented. (See also EC.02.05.01, EP 3.)

LD.04.01.01
The hospital complies with law and regulation.

EP 2
The hospital provides care, treatment, and services in accordance with licensure requirements, laws, and rules and regulations.

LS.01.01.01
The hospital designs and manages the physical environment to comply with the Life Safety Code.
EP 2
The hospital maintains a current electronic Statement of Conditions (E-SOC).
Note: The E-SOC is available to each hospital through The Joint Commission Connect™ extranet site.

LS.02.01.10
Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat.

EP 4
Openings in 2-hour fire-rated walls are fire rated for 1 1/2 hours. (See also LS.02.01.20, EP 3; LS.02.01.30, EP 1) (For full text and any exceptions, refer to NFPA 101-2000: 8.2.3.2.3.1.)

EP 5
Doors required to be fire rated have functioning hardware, including positive latching devices and self-closing or automatic-closing devices. Gaps between meeting edges of door pairs are no more than 1/8 inch wide, and undercuts are no larger than 3/4 inch. (See also LS.02.01.30, EP 2; LS.02.01.34, EP 2) (For full text and any exceptions, refer to NFPA 101-2000: 8.2.3.2.3.1, 8.2.3.2.1 and NFPA 80-1999: 2-4.4.3, 2-3.1.7, and 1-11.4.)

EP 6
Doors that are fire rated do not have unapproved protective plates that are higher than 16 inches above the bottom of the door.
Note: Doors for hazardous rooms may have nonrated protective plates that are placed no higher than 48 inches from the bottom of the door. (For full text and any exceptions, refer to NFPA 80-1999: 2-4.5 and NFPA 101-2000: 19.3.2.1.)

EP 9
The space around pipes, conduits, bus ducts, cables, wires, air ducts, or pneumatic tubes that penetrate fire-rated walls and floors are protected with an approved fire-rated material.
Note: Polyurethane expanding foam is not an accepted fire-rated material for this purpose. (For full text and any exceptions, refer to NFPA 101-2000: 8.2.3.2.4.2.)

LS.02.01.20
The hospital maintains the integrity of the means of egress.

EP 12
The corridor width is not obstructed by wall projections. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.2.3.3.)
Note: When corridors are 6 feet wide or more, The Joint Commission permits certain objects to project into the corridor, such as hand rub dispensers or computer desks that are retractable. They must be no more than 36 inches wide and cannot project more than 6 inches into the corridor. These items must be installed at least 48 inches apart and above the handrail height. (For full text and any exceptions, refer to: NFPA 101-2000: 18/19.2.3.3.)

EP 13
Exits, exit accesses, and exit discharges are clear of obstructions or impediments to the public way, such as clutter (for example, equipment, carts, furniture), construction material, and snow and ice. (For full text and any exceptions, refer to NFPA 101-2000: 7.1.10.1.)
EP 15
Floors or compartments in a building have two or more approved exits arranged and constructed to be located remotely from each other. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.2.4.1.)

EP 18
Suites of patient sleeping rooms are limited to 5,000 square feet, and suites used for other purposes are limited to 10,000 square feet. The suites are arranged so that no intervening rooms are hazardous areas. (See also LS.02.01.30, EP 2) (For full text and any exceptions, refer to NFPA 101-2000: 18/19.2.5.5-7.)

EP 29
Stairs serving five or more stories have signs on each floor landing in the stairwell that identify the story, the stairwell, the top and bottom, and the direction to and story of exit discharge. The signs are placed 5 feet above the floor landing in a position that is easily visible when the door is open or closed. (For full text and any exceptions, refer to NFPA 101-2000: 7.2.2.5.4.)

LS.02.01.30
The hospital provides and maintains building features to protect individuals from the hazards of fire and smoke.

EP 1
Existing vertical openings (other than exit stairs) are enclosed with 1-hour fire-rated construction. In new construction, vertical openings (other than exit stairs) are enclosed by 1-hour fire-rated walls when connecting three or fewer floors and 2-hour fire-rated walls when connecting four or more floors. (See also LS.02.01.10, EP 4.)
Note: These vertical openings include, but are not limited to, communicating stairs, ramps, elevator shafts, ventilation shafts, light shafts, trash chutes, linen chutes, and utility chases. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.1.1.)

EP 11
Corridor doors are fitted with positive latching hardware, are arranged to restrict the movement of smoke, and are hinged so that they swing. The gap between meeting edges of door pairs is no wider than 1/8 inch, and undercuts are no larger than 1 inch. Roller latches are not acceptable.
Note: For existing doors, it is acceptable to use a device that keeps the door closed when a force of 5 foot-pounds are applied to the edge of the door. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.6.3.2, 18/19.3.6.3.1, and 7.2.1.4.1.)

EP 23
Doors in smoke barriers are self-closing or automatic-closing, constructed of 1 3/4-inch or thicker solid bonded wood core or equivalent, and fitted to resist the passage of smoke. The gap between meeting edges of door pairs is no wider than 1/8 inch, and undercuts are no larger than 3/4 inch. Doors do not have nonrated protective plates more than 48 inches above the bottom of the door. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.7.5, 18/19.3.7.6, and 8.3.4.1.)

EP 25
Note: See The Joint Commission's Web site (http://www.jointcommission.org/lsc) for alcohol-based hand rub (ABHR) requirements.
LS.02.01.35
The hospital provides and maintains systems for extinguishing fires.

EP 9
Class K-type portable fire extinguishers are located within 30 feet of grease-producing cooking devices such as deep fat fryers, ranges, griddles, or broilers. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.5.6 and NFPA 10-1998: 2-3.2.)

EP 10
Grease-producing cooking devices such as deep fat fryers, ranges, griddles, or broilers have an exhaust hood, an exhaust duct system, and grease removal devices without mesh filters. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.2.6 and NFPA 96-1998: 1-3.1.)

EP 11
The automatic fire extinguishing system for grease-producing cooking devices does the following: Activates the building fire alarm system. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.2.6; NFPA 96-1998: 7-1.1 and 7-6.2.)

EP 12
The automatic fire extinguishing system for grease-producing cooking devices does the following: Deactivates the fuel source. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.2.6; NFPA 96-1998: 7-1.1 and 7-4.1.)

EP 13
The automatic fire extinguishing system for grease-producing cooking devices does the following: Controls the exhaust fans as designed. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.2.6; NFPA 96-1998: 7-1.1 and 8-1.5.)

LS.03.01.20
The hospital maintains the integrity of the means of egress.

Note 1: This standard applies to sites of care where four or more patients at the same time are provided either anesthesia or outpatient services that render patients incapable of saving themselves in an emergency in the hospital.

Note 2: This standard applies to all hospitals seeking accreditation for Medicare certification purposes, regardless of the number of patients rendered incapable.

Note 3: In leased facilities, the elements of performance of this standard apply only to the space in which the accredited organization is located; all exits from the space to the outside at grade level; and any Life Safety Code building systems that support the space (for example, fire alarm system, automatic sprinkler system).

EP 8
Exits, exit accesses, and exit discharges are clear of obstructions or impediments to the public way, such as clutter (for example, equipment, carts, furniture), construction material, and snow and ice. (For full text and any exceptions, refer to NFPA 101-2000: 7.1.10.1.)

EP 11
In existing buildings, dead-end corridors are no longer than 50 feet. In new buildings, dead-end corridors are no longer than 20 feet (or no longer than 50 feet when there is an approved automatic sprinkler system). (For full text and any exceptions, refer to NFPA 101-2000: 20/21.2.5.)

EP 15
Nothing is stored in any exit enclosure. (For full text and any exceptions, refer to NFPA 101-2000: 7.2.2.5.3.)
Tackling Top Challenging Standards

Tips and Reminders to Support Compliance in EC, EM, and LS

The Joint Commission recently released a list of the most challenging standards for the first half of 2011. These standards often present difficulties for organizations, and noncompliance can result in Requirements for Improvement (RFIs).

Several of these standards involve the “Environment of Care” (EC), “Life Safety” (LS), and “Emergency Management” (EM) chapters (see EC News, December 2011 for a complete list.) Over the next few months, EC News will be taking a closer look at some of these challenging standards by program and offering quick compliance reminders and suggestions to consider. These tips are not meant to provide an in-depth analysis of the standard but are meant instead as an at-a-glance review to assist with compliance.

This first month focuses on challenging Life Safety standards for hospitals and critical access hospitals (CAHs). The percentage of noncompliant organizations in 2011 is provided in parentheses after the standard.

Standard LS.02.01.10—Fire Protection Features
(CAH noncompliance: 68%; Hospital noncompliance: 57%) This standard requires organizations to design, construct, and maintain their buildings and fire protection features—automatic sprinkler systems, walls, and doors—to minimize the effects of fire, smoke, and heat.

TIP—Automatic Sprinkler Systems
Reference the *Life Safety Code®* (LSC), Table 19.1.6.2 to verify that your organization is in compliance with the applicable National Fire Protection Association (NFPA) height, construction, and automatic sprinkler requirements. (Note: New buildings—those with building plans dated after March 2003—must have approved automatic sprinkler systems. Existing buildings—those with building plans dated before March 2003—may need automatic sprinkler systems depending on the construction type.)

REMINDER—Building Separations (Walls)

Building separations—otherwise known as walls—must be solid and extend from the floor slab to the floor or roof slab above and from the outside edge of the building to the opposing outside edge. These walls must protect occupants from fire for 2 hours and cannot have any holes unless these holes are protected. Any doors in the walls must be fire rated for 1½ hours.

TIP—Fire-stop Material

When protecting any holes in fire-rated walls involving pipes, conduits, cables, wires, and so forth, use a fire-rated material that has been approved by a designated testing agency, such as Underwriters Laboratories, Inc. (UL). Polyurethane expanding foam is *not* considered fire-stop material unless it has been approved by a designated testing agency. If your organization chooses to use a polyurethane product, retain the product's spec sheet to show the Joint Commission surveyor that you are using an approved fire-stop.

*Life Safety Code®* is a registered trademark of the National Fire Protection Association, Quincy, MA.
LS.02.01.20—Means of Egress

(CAH noncompliance: 52%; Hospital noncompliance: 57%) This standard covers how people can safely leave a building during a fire. When leaving—sometimes called “egressing”—from an area, individuals should know where to go and how to get there, and also be assured that nothing will prevent their safe exit.

REMINDER—Doors in Path of Egress

During a fire, all doors along an exit path must open with the direction of travel (although the LSC permits some exceptions, pertaining to occupant load or existing smoke barriers, for example), so that occupants may exit quickly without getting caught behind an opening door.

TIP—Items Installed in Corridors

Corridors must be free from clutter. This includes hanging decorations, stored furniture, construction material, and equipment that is not in use. When corridor walls are at least 6 feet apart, your organization can hang hand rub dispensers, retractable computer desks, and other equipment that is no more than 36 inches wide and does not project more that 6 inches into the corridor. If you install these items, place them at least 48 inches apart and locate them above handrail height.

REMINDER—Carts in Egress Corridors

Three types of carts are allowed in egress corridors: crash carts on wheels, wheeled isolation carts for patients who are under isolation, and chemo carts for patients receiving chemotherapy. Equipment that is considered gin useh used at least every 30 minutes.is also allowed in egress corridors.

TIP—Stairwell Signage

To prevent panic, put adequate signage on stairwells in buildings with five or more stories. These signs should show an individual where he or she is in the stairwell and how much farther he or she needs to go to exit the building.

LS.02.01.35.Fire Extinguishing Systems

(CAH noncompliance: 52%; Hospital noncompliance: 33%) This standard addresses how organizations provide and maintain systems for extinguishing fires.

TIP—Automatic Sprinklers

Regularly inspect your automatic sprinkler equipment. Verify that any piping is securely attached to the ceiling, so that rapid water movement does not cause the pipe to dislodge or break apart. Make sure that sprinkler piping is not used to support other items, such as cables, as this can present a hazard during a fire emergency when the sprinkler engages. It may be useful to include this inspection in the environmental tours process.

REMINDER—Fire Extinguishers

Install your fire extinguishers so that an individual does not have to travel more than 75 feet to reach one. Remember, extinguishers must be no more than 75 feet from any location, so installing extinguishers every 75 feet along a hallway might not comply with this standard. You must also consider the distance an individual must travel to get to the hallway.
LS.02.01.30.Fire and Smoke Protection Features

(CAH noncompliance: 50%, Hospital noncompliance: 47%) This standard addresses the concept of fire and smoke protection features, including vertical shafts, storage areas, exit corridors, and smoke compartments.

REMEMBER—Vertical Openings (Shafts)

In a healthcare organization, there are often vertical openings or shafts that can act as a chimney during a fire and, if not properly protected, spread the fire and smoke from one floor to another. Depending on the height of a vertical opening, different construction requirements apply. In new construction, vertical openings should be enclosed with 1-hour fire-rated walls when connecting three or fewer floors and 2-hour fire-rated walls when connecting four or more floors. (In existing construction, the fire rating of the enclosure is 1 hour.)

REMEMBER—Perimeter Walls

In storage areas of existing buildings that are not sprinklered, perimeter walls must extend from the floor to the deck, have 1-hour fire-rated construction, and include a 45-minute fire-rated door that latches and closes automatically. In sprinklered storage areas of existing buildings, perimeter walls must resist the passage of smoke and have doors that latch and close automatically.

REMEMBER—Fire-Ratings for Corridor Walls

Verify that your corridor walls are fire rated for 30 minutes and extend from the floor slab to the floor or roof slab above. For sprinklered areas, these walls can be shorter extending only to or just above the ceiling, if the ceiling is constructed to limit the passage of smoke.

TIP—Corridor Doors

Ensure that corridor doors have the following characteristics:

• Are constructed from at least 13.4-inch thick solid bonded wood core.
• Do not contain any ventilation louvers or grills, except in cases where the door leads to a bathroom, toilet, or sink closet that does not contain quantities of flammable or combustible materials.
• Are hinged to swing.
• Can positive-latch.
• Have an undercut at the bottom of no more than 1 inch.
• If there is a pair of corridor doors next to each other, the pair has a distance at the meeting edge of no more than 1.8 inch.

Stay logged in to EC News in the coming months for more most-challenging standards tips!
Tracing the Environment of Care

A sample fire safety mock tracer you can use

Tracer methodology is the cornerstone of The Joint Commission’s accreditation process because it helps surveyors analyze a health care organization’s systems and processes for providing care, treatment, and services. Furthermore, it reveals performance issues within and between those systems and processes.

Your organization can capitalize on the benefits of tracer methodology by conducting “mock tracers”—practice tracers meant to simulate an actual tracer. Performing mock tracers can help your organization evaluate the effectiveness of its policies, engage staff in looking for opportunities to improve processes, and identify compliance issues that need attention.

Performing environment of care (EC) mock tracers is not difficult, although the process is slightly different than the process for performing tracers that assess clinical issues. During EC mock tracers, the individual conducting the tracer—the “mock surveyor”—must focus on organizational systems and processes specifically related to the physical environment rather than examine the care, treatment, and services patients receive. During an EC mock tracer, the mock surveyor might visit (and revisit) any department or area of the organization—typically beginning where a potential risk associated with a system or process is encountered or first occurs. For example, a mock tracer might start where a particular safety or security incident occurs, where a particular piece of medical equipment is used, or where a particular hazardous material enters the organization.

Mock surveyors should talk with staff members during the mock tracer, asking them to describe or demonstrate their roles and responsibilities for minimizing a particular risk, responding to an incident or a problem, and/or reporting that incident or problem. During this interchange, mock surveyors should listen and look for evidence of compliance with standards and National Patient Safety Goals, consistent implementation of and adherence to organization procedures and policies, effective communication within and between departments, and examples of staff competency for job assignments.

The following example is designed to further illustrate how an individual—acting as a mock surveyor—might conduct a mock tracer. It describes where the individual might visit during a tracer, who he or she might speak with, and what questions he or she might ask. (See the sidebar “Fire Safety Scenario” on page 16 for specific questions to consider asking as you conduct this mock tracer.) Keep in mind that each tracer is unique. There is no way to know all the questions that might be asked during a tracer or how all the responses to the questions might play out. This scenario is meant to serve as an educational or training tool for organization staff.

A MOCK TRACER EXAMPLE: FIRE SAFETY

In the following scenario, a surveyor traced the methods of entrance and egress through a hospital’s mechanical rooms. Within the tracer, the surveyor explored issues related to these priority focus areas:

- Communication
- Orientation & Training
- Physical Environment

Mock tracer scenario

The surveyor conducted this tracer in a cardiac center affiliated with a large hospital system. The cardiac center provided a wide range of cardiac care, including imaging and diagnostic testing, surgical services, and rehabilitation.

(Bracketed numbers correlate to the sample tracer questions in the sidebar on page 16.)
Discussing directions with the facilities manager

To begin this tracer, the surveyor asked the facilities manager if he had any written policies or procedures regarding entrances and exits in the mechanical areas, and he said that he did not. [1] He did, however, have a map of those areas with the locations of the equipment marked, as well as the entrances and exits. The surveyor then requested a walk-through of the numerous boiler rooms and mechanical areas that keep the facility running, to evaluate the entrances and exits.

During the walk-through, the surveyor noted that although exits were clearly marked, there were many other doors throughout the areas that were unmarked. He asked about those doors and was told that they led to other rooms within the mechanical areas. [2] The surveyor suggested that doors not leading out of the area should be marked to indicate where they led and/or with a “NO EXIT” sign.

As a follow-up, the surveyor asked if the door to the roof was labeled as such. The facilities manager showed him that it was; however, the sign was dirty and difficult to see, so the surveyor suggested cleaning or replacing it. [3]

He then asked the facilities manager if he had ever conducted walk-throughs to review entrance and exit signs. [4] The facilities manager said that he did perform walk-throughs to review other potential safety issues, but he had not done so to review signage. The surveyor asked him if there was a schedule for sign replacement, and the facilities manager said that signs were replaced when they began to rust or fade or otherwise needed replacement. [5]

The surveyor wondered if the facilities manager had considered additional signs in that area to mark emergency exits and to indicate directions through the mechanical facilities. The facilities manager said that he had not because those issues had never caused problems in his department. Next, the surveyor asked if maintenance personnel, vendors, and other nonstaff personnel ever entered those areas without a staff member accompanying them, and the manager said that they often did. [6] When the surveyor asked how those people would be able to locate an exit in an emergency, he said that most of the outside people walking through those areas had visited the facility multiple times. [7] Therefore, he had assumed that they would be able to find the appropriate egress in an emergency. The surveyor then asked if the facilities manager had ever taken a person unfamiliar with the facility to the mechanical rooms to see if he or she was able to find the way in and out. [8] The manager replied that he had not but that he would.

Fire Safety Scenario: Sample Tracer Questions

The bracketed numbers before the questions correlate to questions, observations, and data review described in the sample tracer. The information gained by conducting a mock tracer can help highlight a good practice and/or determine issues that may require further follow-up.

Facilities Manager:

[1] May I have copies of any written policies and procedures regarding entrances and exits in the mechanical areas?

[2] Why are some of the doors in this area unmarked?

[3] Is the door that leads to the roof identified as such?

[4] How often are the exit signs checked in your mechanical rooms? Whose responsibility is it to check these signs?

[5] Is there a set schedule for replacing signs in these areas?

[6] Do maintenance personnel, vendors, and other nonstaff personnel ever enter these areas without a staff member accompanying them?

[7] Without directional signage, how are these vendors able to locate the best route for emergency egress?

[8] Have you ever taken someone unfamiliar with the mechanical rooms through the area to evaluate the need for additional signs?

[9] How do you mitigate potential hazards?

[10] Please provide a copy of the policies regarding trip hazards and other potential dangers.

[11] May I see the most recent safety assessment for the department?
The mechanical room had adequate lighting, the surveyor noted, although there were some trip hazards and a low-hanging pipe that could be dangerous for taller people. The surveyor asked how the organization would mitigate the risk of those hazards, and the manager said that those hazards had once had reflective tape on them, but the tape had worn off over time. [9]

The surveyor requested a copy of the policies regarding trip hazards and other potential dangers. [10] The policy did dictate that reflective tape could be used in certain situations, but it indicated that the tape should be checked and replaced, if necessary, every six months. The surveyor then asked for a copy of the most recent safety assessment for the department. [11] Upon reviewing the assessment, the surveyor noted that it did include information on handling trip hazards and low-hanging objects, but it did not address the marking of exits, entrances, and other doors.

**Moving forward**

Based on the tracer findings, the surveyor may discuss areas for improvement in the daily briefing. The discussion might address the following topics:

• Conducting periodic walk-throughs to ensure that entrances, exits, and directions to other areas are all clearly marked and well lit
• Having a staff member accompany nonstaff personnel to the mechanical areas to give a brief orientation and indicate the emergency exits
• Obtaining a copy of the organization’s emergency exit plans to ensure that the mechanical rooms meet those requirements

*This tracer was adapted from Even More Mock Tracers, published by Joint Commission Resources, 2012. Look for more sample tracers in the coming months in EC News!*
Code Red

**NFPA codes, Joint Commission standards continue to reduce hospital fire risks**

This is the first in a series of fire safety articles created through a collaboration between Joint Commission Resources and the National Fire Protection Association (NFPA). Marty Ahrens, Robert Solomon, and Rich Bielen of NFPA and George Mills and John Fishbeck of The Joint Commission contributed to this article.

Eighty-three years ago, the deadliest hospital fire in American history broke out at the Cleveland Clinic, killing more than 120 people. While horrific hospital fire tragedies are peppered across the twentieth century (see the sidebar on page 19), great progress has been made in preventing and controlling blazes in health care facilities (HCFs) since the NFPA was first founded in 1896.

For example, the NFPA estimates that, from 1980 through 1984 (the earliest years of detailed national data), U.S. fire departments responded to an estimated average of 7,100 hospital or hospice fires annually, resulting in an average of five deaths per year. From 2003 to 2006, that number dropped to approximately 1,600 fires and one civilian death a year. By 2010, fire fighters were responding to an average of only 1,400 such fires that caused less than one death per year.

**Setting the standards**

They say there’s safety in numbers. And two numbers that certainly have contributed to the safety of HCFs by preventing and minimizing the impact of fires are 99 and 101—as in NFPA 99 (Health Care Facilities Code) and NFPA 101® (*Life Safety Code®*). NFPA 99 addresses the infrastructure of a facility, such as the electrical, gas, and vacuum systems, and equipment unique to health care and emergency management. The *Life Safety Code* addresses building and staff preparedness to minimize the danger to life from the effects of fire. The *Life Safety Code* is currently used in every US state, has been adopted statewide in 43 states, and is recognized and utilized by several federal government agencies, including the Centers for Medicare & Medicaid Services (CMS). CMS first utilized the 1967 edition of the *Life Safety Code* in 1971, and since then its use and application as part of the regulatory framework for HCFs has grown considerably. Both CMS and The Joint Commission adopted the 1981 edition of the *Life Safety Code* in 1983, and they adopted the 1985 edition in 1988. In 1993, The Joint Commission adopted the 1991 edition, which was the first edition to require sprinkler coverage in new or remodeled spaces.

In 1995, The Joint Commission instituted nonprescriptive Environment of Care standards and introduced its Statement of Conditions™ (SOC)—a management tool that requires Joint Commission–accredited HCFs to document information about all patient facilities, assess their current level of *Life Safety Code* compliance, and describe how they will resolve any deficiencies.


* *Life Safety Code®* is a registered trademark of the National Fire Protection Association, Quincy, MA.
Fire prevention factors

The crucial NFPA mandate to install automatic sprinkler systems in all new and remodeled HCFs since 1991 isn’t the only reason fire incidents have dropped dramatically in recent decades.

Robert Solomon, PE, division manager for Building and Life Safety Codes, NFPA, Quincy, Massachusetts, also credits major changes in the industry that have occurred over this span. These include banning smoking, installing smoke barrier walls, switching from flammable to nonflammable anesthetics, improving responses from fire departments, beefing up HCF fire emergency plans, and enhancing fire training among staff.

“The focus today is ... keeping patients in their rooms or on the floor whenever possible.”

—Robert Solomon, PE, division manager for Building and Life Safety Codes, NFPA

Additionally, today’s fire alarm systems are more advanced and regulations are stricter. For example, pull stations are required at each HCF exit door coming off a floor.

Banning smoking has helped dramatically reduce fire incidents.

“The appropriate and quick response of nurses, doctors, and other staff members in a health care facility is extremely important,” says Solomon. “The focus today is ‘defend in place,’ which means keeping patients in their rooms or on the floor whenever possible. The last thing you want is to be moving infirm or sick people to other floors or to the outdoors in extreme cases.”

From the Ashes: Deadly Hospital Fires Over the Past Century

Here’s a recap of some of the deadliest hospital blazes over the past 83 years, gathered by Marty Ahrens, manager, Fire Analysis Services for the National Fire Protection Association*:

- **May 15, 1929: Cleveland Clinic fire**—More than 120 fatalities. Highly combustible nitrocellulose X-ray film ignited in the basement, next to several heat sources; no sprinklers were present, and openings between floors allowed fire and smoke to travel upward.
- **April 4, 1949: Saint Anthony’s Hospital fire in Effingham, Illinois**—74 fatalities. The fire began in a combustible laundry chute and spread rapidly throughout the open corridors and stairways. No automatic detection, sprinklers, or smoke barriers were in place.
- **December 8, 1961: Hartford Hospital fire in Hartford, Connecticut**—16 fatalities. The blaze began in a trash chute between the basement and first floor. A deadend hallway required occupants to pass fire and smoke to reach the stairs. Sprinklers were located only in limited areas.
- **December 3, 1974: Missouri hospital fire**—8 fatalities. Most rooms contained a significant fuel load, including foam mattresses and bedding. Detectors in the corridors sounded but did not alert the fire department. Sprinklers were in laundry and trash rooms only.
- **November 28, 1986: Riverside General Hospital fire in Riverside, California**—5 fatalities. A patient was smoking in his room after attempting to shut off his medical oxygen without stopping its flow. A nurse pulled the patient into the hallway but, because of rapid fire growth, could not close the room’s door or extinguish the fire.
- **September 1, 1993: New York hospital fire**—3 fatalities. Medical equipment ignited in a patient’s room. The fire spread to bedding and a patient ventilator, causing an unrestricted flow of oxygen. Staff began closing doors and relocating patients to safe areas; automatic closing doors, walls, and sprinklers in the corridor limited the spread of fire and smoke.
- **December 31, 1994: Virginia hospital fire**—5 fatalities initially (a sixth person died months later). Bedding and a mattress ignited when a patient tried to light a cigarette in her room. The fire intensified because of oxygen dispersed from the hospital’s piped oxygen distribution system. Because the patient’s door wasn’t closed, smoke spread into the corridor, other patient rooms, and concealed spaces.

* Ahrens notes that no individual hospital fire in the past 40 years has resulted in more than eight deaths.
The bottom line is that “the better staff members are educated, the better they can save lives,” says George Mills, MBA, FASHE, CEM, CHFM, CHSP, director, Department of Engineering, Division of Healthcare Improvement, The Joint Commission.

A good example of this, Mills notes, is the tornado that struck near St. John’s Regional Medical Center in Joplin, Missouri, in May 2011. While 5 patients died, 183 patients were successfully evacuated.5

“Thanks to the aggressive training and fire drills they’d conducted in the past, the staff knew what to do,” says Mills.

**Enforcing the codes**

While many HCFs receive occasional visits from local fire marshal and are expected to abide by state fire code provisions, it’s the NFPA codes and Joint Commission standards that get their attention. If a provider is among the 15,000 accredited by The Joint Commission, it is entitled to Medicare funding. But that funding may be denied if a Joint Commission survey, conducted every three years, reveals that the facility is noncompliant with *Life Safety Code* 2000 and The Joint Commission “Life Safety” chapter, plus standards such as EC.02.03.01 (fire risks are managed properly), EC.02.03.03 (fire drills are properly conducted), and EC.02.03.05 (fire safety equipment and building safety features are well maintained).

“When a survey, we also assess the staff’s knowledge,” says John E. Fishbeck, RA, associate project director, Standards and Survey Methods Department, Division of Healthcare Quality Evaluation, The Joint Commission. “We ask: Are they managing a fire-safe environment? Are they knowledgeable about their roles in minimizing the risk of fire? Do they know what to do in the event of a fire?”

Fishbeck says that obligating HCFs to maintain an SOC that continually identifies and resolves *Life Safety Code* issues has improved compliance rates over the past 22 years and reduced the potential for fire casualties.

“We ask organizations to look at their own buildings, document any problems, and create plans to correct those problems. This makes hospitals take ownership of their own buildings instead of waiting for us to come and point out their problems every three years,” says Fishbeck.

**Extinguishing today’s challenges**

Despite recent decreases in fire fatalities, many new and evolving challenges exist in health care settings, including operating room (OR) fires. An estimated 550 o 650 surgical fires occur annually in US operating rooms, according to the ECRI Institute.6 Rich Bielen, division manager for the NFPA’s Fire Protection Systems Engineering Department, says that contemporary fire culprits in the OR include laser equipment that can ignite surgical draperies and electrical cauterizing devices.

Additionally, hospitals can still do a better job complying with Joint Commission standards. In 2011 HCFs were most often noncompliant with the following standards: LS.02.01.20—the hospital maintains the integrity of the means of egress (cited 56% of the time, the second most common on the top 10 list); LS.02.01.10—building and fire protection features are designed and maintained to minimize the effects of fire, smoke and heat (52%, the third); S.02.01.30—the hospital provides and maintains building features to protect individuals from the hazards of fire and smoke (45%, the fourth); and the aforementioned EC.02.03.05 (40%, the fifth).7

“The good news is that we don’t see many fires anymore in most hospital public areas or patient rooms. And hospitals and nursing homes are doing an excellent job in terms of properly training staff in fire prevention and emergency response,” says Solomon. “You can have the best sprinkler system, smoke barrier walls, and extinguishers installed,” Solomon notes, “but in these environments, staff is the component most critical to protecting the safety of occupants.”
Solomon adds that health care workers “have to look at a fire in a hospital like a fire on a ship. It’s all hands on deck. It doesn’t matter if you’re the head neuro-surgeon or the janitor. Every person has a role to play, and everybody’s got to work together as a team. That means conducting regular fire drills and updating and practicing your fire safety plan.”

References
Clarifications and Expectations: Super Suites

Special Space Designation Presents Fire Safety Advantages for Health Care Organizations

The Joint Commission has identified the need to increase the field’s awareness and understanding of the Life Safety Code®.* To address this need, The Joint Commission Perspectives® publishes the column Clarifications and Expectations, authored by George Mills, MBA, F ASHE, CEM, CHFM, CHSP, director, Department of Engineering, The Joint Commission. This column clarifies standards expectations and provides strategies for challenging compliance issues, primarily in life safety and the environment of care. You may wish to share the ideas and strategies in this column with your facilities’ leadership.

Fire safety codes and standards for a typical nursing unit restrict corridor storage and require patient room doors to latch and resist the passage of smoke. They also require that the corridors be kept clear and unobstructed. However, certain clinical functions need open areas that do not restrict movement or storage but instead permit easy access to patients, equipment, and supplies. The Life Safety Code does allow for certain areas to have a group of rooms function as one large room. These areas are referred to as suites and can be designated as either sleeping suites (as in intensive care units) or non-sleeping suites (as in emergency departments). The area in a suite is treated as a single space. Therefore, there is no corridor to keep clear, there are no corridor door requirements, and some items can be stored outside the patient care room. The boundaries of the suite separate the function of the suite from other occupied spaces. These differing requirements can present distinct advantages.

Non-Sprinklered vs. Sprinklered Suites

If a suite is part of a smoke compartment that is not protected with an approved automatic sprinkler system, the barrier separation of the suite must meet the same requirements as a corridor wall in a non-sprinklered compartment. That is, the barrier separation must meet the following requirements:

- Be 30-minute fire rated
- Extend from the floor slab to the underside of the floor or roof deck above and from one outside wall to the other
- Limit the transfer of smoke

In addition, the doors must be fire rated for 20 minutes. They should be substantial (for instance, at least 1¾ inch thick), with door undercuts that do not exceed 1 inch. If a door is a corridor door, it must latch and resist the passage of smoke.

Alternatively, in a fully sprinkler-protected smoke compartment, the boundaries providing separation between a suite and other occupied space must meet the same requirements as a corridor wall. The suite separation wall can be a nonrated partition and may terminate at a lay-in ceiling when the ceiling is constructed to limit the transfer of smoke.† An alternative to terminating at the lay-in ceiling is to have partitions terminating at monolithic ceilings that resist the passage of smoke—if there is a smoke-tight joint between the top of the partition and the bottom of the ceiling.

The door in this barrier is a corridor door, so it must be substantial (for instance, at least 1¾ inch thick) if there are no sprinklers. If sprinklers are present, the door must only resist the passage of smoke. The space between the bottom of the door and the floor must not exceed 1 inch, and the door must latch, although it does not need to have an automatic or self-closing device.

* Life Safety Code® is a registered trademark of the National Fire Protection Association, Quincy, MA.
† NFPA 101-2000 18.3.6.2 and 19.3.6.2.1, Exception 1.
Sleeping Suites

In a typical nursing unit (in other words, a unit that is not a suite), a patient sleeping room must have an exit access door leading directly to an exit access corridor.‡ However, this direct access is not required for a suite. Instead, there can be one room intervening between the exit access door in a sleeping suite patient room and the exit access corridor.§ However, the travel distance from anywhere in the sleeping suite to the exit access door within that suite must be no greater than 100 feet.‖ The total travel distance from any point in the suite cannot exceed the overall 150-foot travel distance to a required exit (200 feet if the suite is fully sprinkler protected or is new construction).# A suite must have at least two exits. These exits must be remote from one another so that if one becomes compromised, a second egress is available. One of these two must exit onto an exit corridor. The second exit may exit into an exit enclosure, such as a stairwell.

According to the 2000 edition of the *Life Safety Code*, sleeping suites must not exceed 5,000 square feet in size. Later editions of the *Life Safety Code* allow them to be up to 7,500 square feet, provided that the area is protected by an approved automatic sprinkler system and meets the requirements for separation between the suite and the corridor. The 2012 edition of the *Life Safety Code* allows a size of up to 10,000 square feet for sleeping suites, with certain provisions. If the building complies with the requirements of later editions of the *Life Safety Code*, the suite may be eligible for a traditional equivalency (pending approval, including field verification from either a registered architect, a fire protection professional, or the local fire marshal responsible for the building’s fire safety).**

More Suite Advantages

Many believe that the greatest advantage of suites is that the 8-foot-wide space typically designated as an exit corridor is instead designated as an intervening room. This intervening room does not have the restrictions of a corridor. The doors in this space are not corridor doors, because the space is not a corridor. Those areas designated as hazardous, such as clean or soiled utility rooms, must have doors with self-closing and self-latching devices. Also, nonrated doors within the suite are not required to have positive latches or be smoke resistant. The intervening room can be treated as circulating space, which means that items can be placed in it as long as they do not block egress or create a hazard if there are too many combustibles in the defined space.

---

‡ NFPA 101-2000 18/19.2.5.1.
§ NFPA 101-2000 18/19.2.5.1, Exception 3.
‖ NFPA 101-2000 18/19.2.6.2.4.
# NFPA 101-2000 18/19.2.6.2.2.
** See last month’s column for more details on submitting a traditional equivalency.
Nonsleeping Suites

Nonsleeping suites might be found in the surgical department, laboratory, emergency department, and radiology department. The boundaries are calculated the same for sleeping and nonsleeping suites. Both types of suites must have at least two separate and remote means of egress when they exceed 2,500 square feet. The size of a nonsleeping suite is limited to 10,000 square feet. In the suite, if travel distance to an exit access door is 100 feet or less, one intervening room is allowed. If the travel distance within the suite is less than 50 feet to the exit access door, a second intervening room is allowed.

The “Life Safety” Chapter and Suites

The Joint Commission’s “Life Safety” (LS) chapter requires all organizations to keep their electronic Statement of Conditions™ (E-SOC) current, including required Life Safety Code drawings. In 2011, 52% of all Joint Commission–accredited hospitals did not comply with Standard LS.01.01.01, Element of Performance 2, because of inaccurate Life Safety Code drawings, including the boundaries and suite sizes. The Life Safety Code drawings must clearly display certain information, as shown in “What to Include in Life Safety Code Drawings” on the preceding page.

The Joint Commission does not specify where Life Safety Code drawings should be kept; however, the Basic Building Information (BBI) in the E-SOC does require this information in the Additional Comments text field. Converting Life Safety Code drawings to a Web-based system can provide significant support in maintaining current drawings as well as size restrictions of suites.

This month’s column discusses the role of suites in fire safety. Next month’s column will continue to focus on the importance of maintaining various life safety features by discussing the documentation of compliance with important requirements.
Clarifications and Expectations: Managing Barrier Integrity

The Joint Commission has identified the need to increase the field's awareness and understanding of the Life Safety Code®.* To address this need, The Joint Commission Perspectives® publishes the column Clarifications and Expectations, authored by George Mills, MBA, FASHE, CEM, CHFM, CHSP, director, Department of Engineering, The Joint Commission. This column clarifies standards expectations and provides strategies for challenging compliance issues, primarily in life safety and the environment of care. You may wish to share the ideas and strategies in this column with your facilities’ leadership.

Fortunately for the health care field, The Joint Commission’s Statement of Conditions™ (SOC) has provided a process since 1995 for organizations to manage significant building repair issues that require capital dollars. Although Joint Commission surveyors have found fewer major building issues over the past several years, they have discovered more issues related to the ongoing maintenance of the building. Last month’s column (see May 2012 Perspectives, pages 6–8) offered a methodology to inspect and maintain doors in order to ensure that they properly close and latch. This month’s column focuses on the role of fire and smoke barriers and suggests a method for managing access points.

“Defend in Place” and Compartmentalization

Health care fire response plans generally incorporate a strategy of “defend in place” to ensure that patients who are incapable of self-preservation can depend on the building—and the staff—to protect them until their safety is assured. The defend-in-place strategy requires compartmentalization; that is, while one compartment contains the fire, the other compartments provide a safe refuge for all individuals to remain safely in place. Containing the fire until either an approved sprinkler system or responders can quench it allows time for occupants to move or be moved to safety into laterally adjacent compartments.

Smoke barriers or fire-rated walls form each compartment. Smoke barriers restrict the movement of smoke while subdividing the building; fire barriers protect the occupants from products of combustion for a predetermined amount of time. For example, a two-hour fire-rated assembly is designed to contain fire to the site of origin for up to two hours. Both smoke and fire-rated barriers serve as a membrane that stretches from one outside wall to the other outside wall, and from the floor to the underside of the floor above or the roof above, with all openings properly sealed. Now that we’ve defined smoke and fire barriers, let’s focus on how to ensure the integrity of the barrier system to either restrict smoke movement or to limit the spread of fire.

Openings in Barriers

Openings in barriers must be protected. Smoke-barrier doors are required to have self-closures or automatic closing devices but are not required to latch. A fire-barrier door is a rated assembly, has self-closures or automatic closing devices, and is required to latch (per the “Life Safety” [LS] chapter of the comprehensive accreditation manuals as well as the LSC). Both door types should have gaps less than or equal to one eighth of an inch at meeting edges and less than or equal to three fourths of an inch at undercuts (with some exceptions). (We provided suggestions for managing the scheduled maintenance of these doors in last month’s Perspectives.)

Each organization also must protect openings in barriers other than doors. The LSC has specific requirements for pass-through windows in a fire-rated barrier including fire shutters; alternately, shutters in pass-through windows in smoke barriers must interface with the smoke detection system.

---

* Life Safety Code® is a registered trademark of the National Fire Protection Association, Quincy, MA.
The real culprit undermining the integrity of barriers often involves activity above the lay-in ceiling assembly. These locations “above the ceiling” contain miles of cables, pipes, conduits, and other materials. When contractors who encounter a barrier while running cables must penetrate the barrier, thereby breaching its integrity, the hole created to accommodate the cables (or any other penetrating material) must be properly repaired with appropriate material. If it is not, the breach in the barrier will allow smoke and products of combustion to invade the adjacent compartment, which diminishes patient safety and compromises the defend-in-place process.

Creating penetrations in barriers to accommodate building services is allowed as long as the organization repairs the barrier to restore its integrity. That said, Joint Commission surveyors found unsealed penetrations in fire barriers in at least half of the surveys conducted in 2011 scored at Standard LS.02.01.10 (52%) and in smoke barriers at Standard LS.02.01.30 (45%). As it’s not always clear who made the hole in the wall, the best suggestion for managing barriers may be just to limit access to these barriers.

**Limiting Access to Barriers**

Effective management of barriers may begin with limiting access to them. One way to do this would be to put a “bounty” on those who are not authorized to have access to the barriers. How might this work? First, the Facilities Department would create a “barrier access program” that grants access privileges and a work permit to those who need to work above the ceilings and potentially create penetrations in fire and smoke barriers. Facilities staff would grant these workers access privileges and work permits only after training them on the barrier-repair process.

---

### Related Requirements

**Standard LS.02.01.10**

Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat.

**Rationale for LS.02.01.10**

A building should be designed, constructed, and maintained in order to minimize danger from the effects of fire, including smoke, heat, and toxic gases. The structural characteristics of the building, as well as its age, determine the types of fire protection features that are needed. The features covered in this standard include the structure, automatic sprinkler systems, building separations, and doors.

**Note:** When remodeling or designing a new building, the hospital should also satisfy any requirements of other codes and standards (local, state, or federal) that may be more stringent than the Life Safety Code. Also, the Life Safety Code contains special considerations for minor and major renovation.

**Related Element of Performance for LS.02.01.10**

C 9. The space around pipes, conduits, bus ducts, cables, wires, air ducts, or pneumatic tubes that penetrate fire-rated walls and floors are protected with an approved fire-rated material. **Note:** Polyurethane expanding foam is not an accepted fire-rated material for this purpose. (For full text and any exceptions, refer to NFPA 101-2000: 8.2.3.2.4.2)

**Standard LS.02.01.30**

The hospital provides and maintains building features to protect individuals from the hazards of fire and smoke.

**Rationale for LS.02.01.30**

Fire and smoke are special concerns in health care organizations because of the inability of some patients to evacuate without assistance from staff. If not properly protected, the building can put patients at risk because smoke and fire can travel through openings in a building. To facilitate safe evacuation, the effects of fire and smoke can be contained when sections of a building are separated into multiple compartments. In addition, interior finishes need to be controlled to minimize smoke and toxic gases. Openings are necessary and include such features as heating, ventilating, and air conditioning (HVAC) systems, elevator shafts, and trash and laundry chutes. Hospitals should design and maintain these openings to contain fire to a compartment or floor.

**Related Element of Performance for LS.02.01.30**

C 18. Smoke barriers extend from the floor slab to the floor or roof slab above, through any concealed spaces (such as those above suspended ceilings and interstitial spaces), and extend continuously from exterior wall to exterior wall. All penetrations are properly sealed. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.3.7.3)
process (referred to as “fire-stop” and “smoke-stop” repairs) or through an agreement identifying who will repair the opening. The dated work permit would state that the person working above the ceiling has been authorized by the Facilities Department, and it is affixed to the ladder (which is how the bounty would come into play). The barrier access program would specify the duration of the permit; for example, if permits are limited in duration to one day, Facilities staff can ensure that barrier repairs are reviewed once completed. Then, if any staff member sees and reports someone above the ceiling without a permit, a bounty would be paid out.

A Sample Scenario

Let’s examine a sample scenario of how a barrier access program and the bounty concept would work. In this scenario, the Facilities Department has developed a barrier access program, and everyone in the organization has been instructed that any person on a ladder working above the ceiling must have a barrier access permit affixed to the ladder. They have also been trained to report unauthorized workers to Security.

A nurse walking to the nurse’s station notices a person on a ladder working above the ceiling without a barrier access permit. As instructed, the nurse says nothing and continues on his way. When the nurse reaches the nurse’s station, he calls Security. About 15 minutes later, Security arrives on the unit, ostensibly performing daily rounds but actually responding to the nurse’s information. Security approaches the person on the unauthorized ladder and asks him to climb down. Security finds out that the person is a contractor running computer cables and asks him if he is aware of the barrier access program. The contractor responds that he has not heard of the program, so Security tells him he must leave the premises for the day, informing him that each morning, from 7:00 A.M. to 8:00 A.M., Facilities issues barrier access permits to authorized contractors.

The outcomes for the players in this scenario?
• The nurse: As a bounty for reporting the unauthorized ladder, he receives a gift card to the cafeteria.
• The contractor: The next day he is in the Facilities office, learning about the barrier access program and negotiating with Facilities staff to have the penetrations properly repaired by trained Facilities staff.
• Facilities Department: With the barrier access program in place, the department is working toward effectively managing access to the barriers.

Implementation

An organization planning a barrier access program may consider implementing the following ideas:
• Reconciling life safety drawings with actual barriers
• Requiring a label or stamp that identifies the type of barrier to be placed at access points
• Requiring digital pictures of the correctly repaired opening if the contractor is going to make repairs
• Conducting random barrier inspections to ensure they are being maintained
• Requiring that a percentage of repairs be field tested to ensure they meet the design standards for the repair of an opening
• Creating charts that identify proper fire- or smoke-stop techniques associated with the openings
• Using one manufacturer of fire-stop products (to ensure consistent application)

What about existing penetrations? It is up to the organization to assess the condition of the barriers and create a management plan to identify unsealed penetrations and repair barriers. Organizations should make it an annual habit to ask, “Are the spaces around pipes, conduits, bus ducts, cables, wires, air ducts, and pneumatic tubes that penetrate fire-rated walls and floors protected with an approved fire-rated material?” (See Standards LS.02.01.10, EP 9, and LS.02.01.30, EP 18, in the box on page 26.)
The organization’s annual assessment of existing penetrations and its ongoing management of present barrier penetrations should include scrutinizing for the use of improper products to fill penetrations. For example, polyurethane expanding foam is often used to fill cavities between a window and the wall framing it. As it expands, it hardens into a beige material. The material has a UL label that attests to its insulating properties. When used as designed—only for insulation—it is encapsulated behind the drywall. However, some organizations have used this expanding foam to fill penetrations. But because it burns rapidly and emits toxic smoke, it is never appropriate for either smoke- or fire-barrier repairs.

Unsealed penetrations can be placed on the electronic SOC as a Plan for Improvement (PFI) item. The Joint Commission allows the organization to group penetrations as a single PFI provided the grouping is associated with a specific list or drawing that identifies specific numbers and locations. For example, a PFI could make this statement: “37 penetrations on 3West as identified on Life Safety Drawing 3W dated April 19, 2012.” Remember, the PFI cannot be closed until all 37 penetrations are corrected. Also, once a PFI is created, there must be an assessment of which Interim Life Safety Measures (ILSM) should be initiated, as defined in the organization’s ILSM Policy.

This month’s column discusses managing barrier integrity. Next month’s column will continue to focus on the importance of maintaining the various life safety features by discussing how to keep corridors clear of clutter.
Clarifications and Expectations: Managing Door Maintenance

The Joint Commission has identified the need to increase the field’s awareness of the Life Safety Code®.* To address this need, The Joint Commission Perspectives® introduces Clarifications and Expectations, a new column authored by George Mills, MBA, FASHE, CEM, CHFM, CHSP, director, Department of Engineering, The Joint Commission. This column will appear on a regular basis in order to clarify standards expectations and provide strategies for challenging compliance issues, primarily in life safety and the environment of care.

In comparing the survey findings of the Centers for Medicare & Medicaid Services (CMS) and The Joint Commission from the past few years, it becomes clear that several compliance issues related to maintenance activities exist. Although surveyors cite major building deficiencies, the greater number of findings pertain to items that are either broken or out of adjustment and need maintenance attention. (The exception seems to be the ongoing problem of barrier integrity, which will be addressed in the next issue of Perspectives.)

While maintenance is required for a variety of items, this month’s column addresses maintaining doors—in particular, ensuring that doors that are required to latch do so. Doors fail to latch for a variety of reasons, perhaps because the door latch is broken or out of adjustment or because the closure is ineffective. Occasionally, a door doesn’t latch because someone has taped the latch open or covered the latch receiver. Do doors fail because of lack of maintenance? Breakage? Staff overriding building design? Staff may need education about how important door latches are to “defend in place” in health care. (In the event of fire, the basic strategy in a health care occupancy is to “defend in place”—to isolate patients and staff from fire and smoke while emergency personnel respond to the situation.)

### Tips for Managing Door Maintenance

How does an organization successfully manage maintenance? Performing daily, weekly, monthly, and quarterly rounds is a process that generally works. To manage doors in particular, the organization may wish to identify its high-traffic areas and increase maintenance inspection of doors in those areas. High-traffic areas would be considered “at risk” based on frequency of use and exposure to possible damage. Less-traveled routes may not be as high of a risk and may not need to be inspected as often.

To make this work in the “real world,” the organization could use a door inspection checklist to standardize what is inspected at each door. (The sample checklist above provides a very basic idea of what a checklist would look like; an organization’s own checklist could require coverage of significantly more details.) The organization

---

* Life Safety Code® is a registered trademark of the National Fire Protection Association, Quincy, MA.
could also inventory all doors and sort them by type, for example, corridor doors, smoke barrier doors, and fire-rated doors (organizations also may include nonprotective doors—such as doors to patient toilet rooms—as a fourth category). Doors may then be further sorted by criteria such as level of risk if the door system fails, volume of traffic, history of repairs, and so on.

The formalized door inspection should be based on the inventory and level of risk associated with the barrier/enclosure protected by each door. Those doors that are most critical in providing building separation or protection would likely benefit from more frequent inspections, while seldom-used doors may need only an annual inspection. A thorough and accurate door repair history can help in determining the required frequency of inspection.

**A Sample Scenario**

Let’s examine a sample scenario using standards and elements of performance (EPs) in the “Life Safety” (LS) and “Environment of Care” (EC) chapters of the *Comprehensive Accreditation Manuals*. In this scenario, the inventory lists 500 doors. These include 400 corridor doors, which include patient room doors (see LS.02.01.30, EPs 9–12); 50 smoke doors, which include corridor doors with self-closures but without latches (see LS.02.01.30, EPs 22–23); and 50 fire-rated doors, which have latches, self-closures, and a rating label on the inside edge (see LS.02.01.10, EPs 4–6). Twenty of the fire-rated doors protect exit enclosures such as fire-exit
stairs (see LS.02.01.20, EPs 9, 14, and 24); another 20 are the means of egress at building separation locations (see LS.02.01.10, EP 4); and the remaining 10 are located throughout the building and protect against various hazards (see LS.02.01.30, EP 1, and LS.02.01.50, EPs 8–10).

The organization’s Computerized Corrective Maintenance Program (CCMP), which it uses to manage work orders and analyze work flow and completion rates, shows that 10 corridor doors are repaired per quarter and that there is some correlation with fire drill dates. This data seems to establish that feedback from nursing staff and other fire drill participants helps manage maintenance for this large number of doors (see the sidebar on page 29). The organization decides to inspect all corridor doors on a semiannual basis, beginning with doors in areas where patients are least able to protect themselves in an emergency and ending with doors in administrative areas.

Further review of the CCMP shows that staff rarely request work orders for smoke doors and fire doors on the upper floors; in addition, the few orders that are requested seem to coincide with the environmental tours conducted every six months (see EC.04.01.01, EP 12). Realizing that these semiannual tours identify door issues—and deciding to measure the time between failure and discovery—the organization inspects these doors quarterly until it more accurately understands fail rates.

The last group identified in the CCMP data analysis includes high-traffic doors in materials distribution locations, such as Materials Management, Dietary, and Environmental Services Supply Room areas, as well as doors leading from the loading docks into Materials Management. Based on comments from maintenance staff, the organization decides to require a daily inspection at the beginning of second shift to maintain the integrity of these doors.

As this scenario demonstrates, ensuring that building features are fully functional is the responsibility of everyone who works for the organization.

This month’s column discusses inspecting doors to ensure that building compartmentalization is intact. Next month’s column will discuss doors as part of barriers and the problems surveyors identify with barrier integrity.

<table>
<thead>
<tr>
<th>Glossary of Terms</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>barrier*</td>
<td>A physical obstruction that is intended to prevent contact with equipment or live parts or to prevent unauthorized access to a work area.</td>
</tr>
<tr>
<td>compartmentalization</td>
<td>The concept of using various building components to prevent the spread of fire and combustion and to provide a safe means of egress to an approved exit.</td>
</tr>
<tr>
<td>fire-rated</td>
<td>Material that has undergone a test and is fire protection rated or fire resistance rated.</td>
</tr>
<tr>
<td>means of egress</td>
<td>A continuous and unobstructed way of travel from any point in a building or another structure to a public way consisting of three parts: the exit access, the exit, and the exit discharge.</td>
</tr>
<tr>
<td>self-closure</td>
<td>A means of automatically closing a door from the partially or fully opened position.</td>
</tr>
<tr>
<td>smoke barrier*</td>
<td>A continuous membrane, or a membrane with discontinuities created by protected openings, where such membrane is designed and constructed to restrict the movement of smoke.</td>
</tr>
</tbody>
</table>

Clarifications and Expectations: Managing Corridor Clutter

The Joint Commission has identified the need to increase the field’s awareness and understanding of the Life Safety Code®. To address this need, The Joint Commission Perspectives® publishes the column Clarifications and Expectations, authored by George Mills, MBA, FASHE, CEM, CHFM, CHSP, director, Department of Engineering, The Joint Commission. This column clarifies standards expectations and provides strategies for challenging compliance issues, primarily in life safety and the environment of care. You may wish to share the ideas and strategies in this column with your facilities’ leadership.

Part 1

The requirement for keeping corridors clear and unobstructed originates from the National Fire Protection Association (NFPA) Life Safety Code. Federal law requires compliance with the Life Safety Code, which mandates that new health care “aisles, corridors, and ramps required for exit access in a hospital or nursing home shall not be less than 8 feet in clear and unobstructed width.” Clear width is defined as the net unobstructed width of the door opening, without projections. This width is essential for building occupants to exit unimpeded in a fire emergency. If an existing hospital has 8-foot-wide corridors, the 8-foot width must be kept clear. Reducing the materials that could contribute to a fire is certainly another reason for keeping corridors clear.

Keeping corridors clear of clutter is essential for easing patient movement in any type of emergency. Consider one organization’s emergency response plan to a tornado: Move patients into the corridor, away from patient room windows. Corridors that are clear of clutter do not cause any problems in this emergency response, but corridors with equipment already taking up space slow down this important process, when minutes—and even seconds—matter.

Storage in the Corridor

The Joint Commission allows certain items, such as crash carts and isolation carts, to be stored in egress corridors as long as they are “in use.” Good medical practice dictates that a crash cart be ready for use at all times, so for purposes of the Life Safety Code, it can be considered to be always “in use.” An isolation cart (or a chemo cart) may be in the corridor outside a room that currently houses a patient associated with the cart. The cart may remain if the patient leaves the room for any reason, such as for diagnostic testing. However, when the patient is discharged, the cart must be removed.

Some organizations have used isolation cabinets instead of isolation carts to meet their needs. These cabinets hang over the top of the door. There are at least two considerations related to width when choosing cabinets over carts. According to the Life Safety Code, when the door is closed, the cabinet cannot project into the corridor more than 6 inches. In addition, with the cabinet hanging on the door, the door opening must still meet the Life Safety Code specifications of 32 inches clear width or 34 inches leaf for existing construction and 41½ inches for new construction.

Another thing to consider is the prohibition against items projecting into the corridor more than 6 inches for all corridor projections, including alcohol-based hand rub (ABHR) dispensers, bulletin boards, and so on. However, wall-mounted items that project more than 6 inches while in use but that can be stored with less than a 6-inch
projection are permissible (for example, a keyboard or writing surface that drops down while in use and self-retracts when not in use). The limits for spacing, mounting height, and length of items on the corridor wall can be found in Life Safety (LS) Standard LS.02.01.20.

Any item that has not been used in the past 30 minutes is considered to be stored. The 30-minute limitation was defined by the Centers for Medicare & Medicaid Services (CMS) in a May 2010 “Survey & Certification” memo, which also includes information on the 6-inch projection topic. The intent of the 30-minute rule is not to have nursing staff nudge the object every 29 minutes, nor will a Joint Commission surveyor mark a wheel and come back 31 minutes later. Rather, if an item is not in use, it should be returned to storage.

“Stored” Patients in Corridors: An Interpretation

A few years ago, a hospital experienced problems with patient throughput in the emergency department, where patients were crowded into the waiting room prior to being seen by a clinician. The hospital’s solution was to move the patients who were waiting to be admitted to the medical/surgical units onto gurneys. According to the 30-minute provision, these patients would be considered “stored” in the egress corridor after 30 minutes. But what implications did this have for fire safety—not to mention other types of safety?

This matter was discussed at a Healthcare Interpretation Task Force (HITF) meeting in 2008. After a thorough discussion, all of the HITF members (not just the “authorities having jurisdiction” members) developed the following policy position on this practice:

The plan or concept to have patient treatment and patient staging in exit access corridors is not permitted by the code. The following issues would be considered violations of the Life Safety Code and emergency response and operational concerns of the Life Safety Code.

a. By having patients staged in the corridor, you introduce corridor clutter, which can greatly hamper emergency response to a fire event. Where would patients be moved to during a fire event? Where would patients in a room be relocated to, and what would the impact of the delay be if other patients, related medical equipment, and beds were in the way?

b. This practice would slow search and rescue efforts of first responders.

c. This practice introduces additional combustible materials into the corridor including use of medical gases.

d. This practice removes the first line of defense from a fire event for the patient—that being the ability to simply close a patient room door.

e. This practice exposes a greater patient population to a fire event that would involve a fire originating in the corridor.

f. This practice would have an impact on the mandated space required in adjacent smoke compartments for horizontal evacuations.

This position is not intending to prohibit an organization to plan for declared surge emergency situations that might occur as a result of manmade or natural disaster events.

The Life Safety Code and this HITF interpretation are crystal clear: Patient storage, sleeping, or treatment in corridors is prohibited.**

---


# The Healthcare Interpretation Task Force (HITF) is chaired by the NFPA, with representatives from CMS, The Joint Commission, VHA, Department of Defense, Indian Health Service, State Fire Marshal, International Fire Marshal, the Agency for Health Care Association, American Society for Healthcare Engineering, and American Health Association. Go to http://www.nfpa.org and search for HITF.

** See NFPA 101-2000, Paragraph 19.3.6.1, Exceptions 1 and 6.
Computers on Wheels

Mobile workstations pose a common corridor clutter problem. These workstations have computers mounted on them and are used intermittently during the 24-hour patient day. Are these workstations in use or stored? Consider a typical day in a medical/surgical unit that begins with morning charting and these computers being out and about for patient documentation as the patients begin their day. After morning charting, such a computer on wheels is idle. By late morning or early afternoon, the computer is accessed by nursing for charting and other care information. Then it again sits idle. Late in the afternoon and through dinner, the computer on wheels is out and in use. The computer is idle again during evening visiting hours, but patient documentation resumes with medication distribution, charting, evening snacks, and other patient care delivery after 10:00 P.M. During the late night/early morning hours, the computer may be used again, depending on the level of care delivered.

It’s clear that in a typical patient care day, there are definite periods of mobile workstation use. But it’s equally clear that there are periods when the computer on wheels sits idle. During these idle periods, the workstation must be stored in an acceptable place—which is not the egress corridor.

Improperly managing mobile workstations may result in unintended clutter growth. At some point, someone parks a chair next to the workstation, then a trash can, and suddenly the mobile workstation becomes an unofficial nursing substation. It’s another clear violation of the Life Safety Code.

Possible Solutions to Corridor Clutter

A number of straightforward solutions can help organizations manage corridor clutter.

Educate staff. Share with staff the importance of keeping corridors clear to keep patients safe. In many emergency events, successful patient care can be associated with clear corridors. Organizations with cluttered corridors have to overcome the clutter as well as manage patient care. Having staff move equipment to make room for patients may delay patient care.

Reduce unused equipment. Reduce the amount of unused equipment in the space. Equipment stored as a convenience for staff should be returned to the department responsible for it (for example, a mobile x-ray machine should be returned to radiology), equipment associated with patient care could go into patient rooms, and other equipment might be stored off the units.

Maximize dead-end corridors. Some buildings have dead-end corridors, which are parts of corridors that do not support egress. To see an example of a dead-end corridor, walk to the end of a nursing unit, to the window that overlooks the parking lot. Turn around with your back to the window and look into the nursing unit. If you find that in the first few feet there are no doors, you are in a deadend space. As you move away from the window a few steps, on your right is a door that leads to the stairs; another few feet, and a door on your left enters the last patient room. That space between the window and the edge of the first door opening is called a dead-end corridor. It does not contribute to the means of egress for the occupants.

You could store equipment in this location if the space is less than 50 square feet. Could that include computers on wheels? Yes. Could a computer on wheels be charging? Yes. Could this space have a gurney, wheelchair, and portable imaging system? Yes, if they do not exceed 50 square feet.†† Keep in mind, however, that storage in a dead-end corridor requires that you install either quick-response sprinklers or standard sprinklers and smoke detection‡‡.

This month’s column begins a discussion on how to keep corridors clear of clutter. Stay tuned for next month’s column, which will continue to focus on keeping corridors clutter free.

†† See NFPA 101-2000, Paragraph 19.3.2.1.
Part 2

Last month we discussed corridor clutter and made the point that items not in use may not be stored in the corridor. This prohibition is based on the *Life Safety Code* requirement that corridors are to be maintained clear and unobstructed to the original design width (typically 8 feet wide).† If an organization starts storing items in the corridors, this 8-foot width can become obstructed. The *Life Safety Code* does allow for storage exceptions such as crash carts, which may be in the corridor at all times. It also permits the use of dead-end space for storage, provided the storage does not exceed 50 square feet. Why is it important to know this? The *Life Safety Code* is federal law, and organizations must comply with it in order to receive Medicare and Medicaid funds.

This month’s column continues the discussion related to corridors, first exploring doors, walls, and air supply before revisiting the issue of corridor clutter first addressed in last month’s column.

**Latching Patient Room Doors**

While doors to patient rooms are not required to have self-closing devices (sometimes referred to as “automatic” closing devices), these doors are required to have latches. This exemption from self-closing devices for patient rooms is a practical one: caregivers need to open these doors when carrying supplies, moving beds, or performing any of a host of other patient care activities. Rather than having caregivers resort to blocking doors open by means of unapproved methods, the *Life Safety Code* has specifically exempted the door closure requirement for self-closing devices since 1981. However, The Joint Commission does expect an organization to have in its fire plan a process to ensure that patient room doors close and latch in a fire emergency. (This is why staff must check each patient room and close the door during a fire drill or fire event.)

Although it doesn’t require a self-closing device, each patient room corridor door must latch, as noted above. For the past six years, The Joint Commission and the Centers for Medicare & Medicaid Services (CMS) have prohibited the use of roller latches (latches that involve a roller that engages a socket or catch to fasten a door). As an alternative to roller latches, door latching devices that users can “hook” with an elbow to pull closed or push the door handle to open when carrying items—instead of having to twist a knob with a hand—have been available for many years.

**Corridor Walls**

In non–sprinkler-protected buildings, the corridor wall resembles a fire barrier. The corridor wall should have a 30-minute fire rating and walls that extend from the floor to the underside of the floor or roof above. There should not be any unsealed penetrations between the corridor and patient care rooms. In a fully sprinkler-protected compartment, however, the rating is removed and, according to the *Life Safety Code*, the corridor wall “shall be permitted to be separated from all other areas by non–fire-rated partitions and shall be permitted to terminate at the ceiling where the ceiling is constructed to limit the transfer of smoke.”‡

A few years ago, a hospital was presented with an $8 million estimate to repair penetrations in its unsprinklered building—repairs critical for maintaining a safe fire-rating. When the hospital discussed with The Joint Commission how to phase in this multiyear project, Joint Commission engineers suggested that the hospital consider installing an approved automatic sprinkler system (AASS), the estimates for which came in at $5 million. It’s no surprise that the hospital chose to resolve the corridor barrier problem by adding sprinkler coverage.

---

† NFPA 101-2000, 18.2.3.3.
Corridors and Air Supply

The Joint Commission does not allow the use of the corridor as a part of air supply, air return, or air plenum (the ducting that allows return air to flow through). Years ago a popular design involved pushing conditioned air into one end of a corridor and exhausting the air out at the other end. The intent was to flow the air from one end of the corridor to the other end, conditioning the space between. In a fire situation, however, this air flow could also spread a fire. For this reason, this design is prohibited by Joint Commission Life Safety (LS) Standard LS.02.01.30, Element of Performance (EP) 13. (Note that LS.02.01.30, EP 21, allows the space above the ceiling to be used as unducted common air plenum for either supply or return air, provided that smoke dampers protect the air transfer openings extending through smoke barriers. However, many states no longer allow this design.)

Revisiting Projections into the Corridor

Maintaining the Life Safety Code—required 8-foot clear corridor width was discussed in last month’s column. The discussion included information on items projecting into the egress corridor. The article stated the following:

The limits for spacing, mounting height, and length of items on the corridor wall can be found in Life Safety (LS) Standard LS.02.01.20.§

In addition, EP 12 of the above standard states the following:

The corridor width is not obstructed by wall projections. (For full text and any exceptions, refer to NFPA 101-2000: 18/19.2.3.3)

Note: When corridors are 6 feet wide or more, The Joint Commission permits certain objects to project into the corridor, such as hand rub dispensers or computer desks that are retractable. They must be no more than 36 inches wide and cannot project more than 6 inches into the corridor. These items must be installed at least 48 inches apart and above the handrail height. (For full text and any exceptions, refer to: NFPA 101-2000: 18/19.2.3.3)

The intent is to allow items to be wall-mounted but not restrict movement in the corridor.

Headroom is an additional dimension that should be considered in these situations. For example, if a large screen monitor were mounted as described in the Note to Standard LS.02.01.20, EP 12 (that is, above the handrail height), and leaned forward to reduce lighting glare, the angled monitor must not lean more than 6 inches into the corridor. However, the Life Safety Code allows projections at 6 feet 8 inches or higher (NFPA 101-2000 7.1.5) to accommodate exit signs and other projections near the ceiling. Therefore, an angled monitor could project more than 6 inches if it is mounted at a 6 feet 8 inch height or higher and be considered compliant.

New Exceptions in the 2012 *Life Safety Code*

Imagine if your organization could place patient lifts right outside the patient rooms. And how about fixed seating in the corridor? In fact, both of these scenarios are new exceptions in the 2012 edition of the *Life Safety Code*.

The Joint Commission has reviewed the 2012 edition of the *Life Safety Code* (NFPA 101-2012) and will consider granting Traditional Equivalency# \| requests from hospitals and long term care organizations to allow patient lifts and transport equipment in the corridor and the installation of fixed seating in the corridor. These actions are consistent with a March 9, 2012, Survey and Certification (S&C 12-21-LSC) letter from CMS to the State Survey Agencies and State Fire Authorities. The S&C updates previous instructions related to CMS policy by offering to consider NFPA 101-2012 for *Capacity of the Means of Egress*. It advises hospitals and nursing homes that they may apply for waivers from CMS to utilize certain sections of the 2012 *Life Safety Code* without showing “unreasonable hardship” by doing so. CMS will review each organization and waiver request for approval on a case-by-case basis.**

The Joint Commission will consider the following conditions eligible for review for possible Traditional Equivalency approval:

**Patient Lifts and Transports.** *Life Safety Code* section 18/19.2.3.4, *Capacity of the Means of Egress*, allows patient lift and transport equipment (gurneys and wheelchairs) to be stored in the means of egress, provided there is a clear corridor width of 5 feet, staff training, and a fire plan that addresses the relocation of wheeled equipment.

**Fixed Seating in Egress Corridor.** *Life Safety Code* section 18/19.2.3.4 permits fixed seating in the means of egress with certain restrictions. These restrictions include maintaining a clear width of 6 feet and ensuring that each group of seats is less than or equal to 50 square feet, with 10 feet between groups. The fixed seating areas must be on one side of the corridor and must not block access to fire protection equipment.

The evolution of the *Life Safety Code* to allow lifts, transport, and fixed seating in the means of egress is based on organizations successfully reducing corridor clutter and taking advantage of the fully-sprinklered compartments. Note that when The Joint Commission reviews a Traditional Equivalency request, it will seek a clear answer to one simple question: How successful is this organization in keeping its corridors clear of clutter?

*This month’s column completes our discussion on keeping corridors clear of clutter. Next month’s column will continue to focus on the importance of maintaining the various life safety features by discussing suites and fire safety.*

---

# An equivalency is an alternate solution that includes evidence of compliance or an assurance that the organization will address any noncompliance as a high priority. In a Traditional Equivalency request, the organization describes how it will offset Life Safety Code deficiencies without reducing the protection set by the code’s requirements. In addition to the request from the organization, third-party verification must be submitted in writing from at least one of the following: a registered architect, licensed/certified fire protection engineer, or local authority having jurisdiction (AHJ). The third-party verification must identify its assessment of the conditions, its concurrence that all code requirements have been met, and its on-site validation of the implementation. Where appropriate, a drawing should be submitted with this documentation. Submission information for Traditional Equivalencies can be found on the organization’s Joint Commission Connect™ extranet site in the electronic Statement of Conditions™ (e-SOC) under the Plan for Improvement (PFI) menu item Request for Extensions and Equivalencies.


** The organization will need to apply to both CMS for the waiver and The Joint Commission for the Traditional Equivalency determination.
Appendix A: Faculty Biographies

George Mills, M.B.A., FASHE, CEM, CHFM, CHSP
Director of Engineering
Department of Engineering
The Joint Commission

As Director for the Department of Engineering at The Joint Commission, Mr. Mills provides standards interpretation and education to The Joint Commission’s Surveyors and accredited organizations, reviews equivalency requests, conducts surveys, and is a nationally recognized speaker. Previously, Mr. Mills served as Senior Engineer for the Standards Interpretation Group in the division of Accreditation and Certification Operations at The Joint Commission.

Mr. Mills has over 25 years of experience in the healthcare setting, and previous experience in the construction industry and structural steel fabrication. Prior to joining The Joint Commission, he served as a Director of Facilities; held national positions related to Codes and Standards, including serving as Director of Codes & Compliance for ASHE; and served as a consultant.

Mr. Mills is a Fellow with the American Society for Healthcare Engineering (FASHE), a Certified Healthcare Facility Manager (CHFM), a Certified Energy Manager (CEM), and a Certified Healthcare Safety Professional (CHSP). He is also a past President of HESNI – a local ASHE chapter.

Mr. Mills earned an MBA from California Coast University in Santa Ana, California.

Mr. Mills is an employee of The Joint Commission.

John Maurer, CHFM, CHSP
Engineer
Department of Engineering
The Joint Commission

Mr. Maurer has been with The Joint Commission since 2007 as a staff member in the Central Office and as a surveyor. He has over 20 years experience in facilities management, 11 years of which were in management positions. In addition to conventional facilities functions, he has had the responsibility for several construction projects, energy reduction and efficiency initiatives, and safety programs.

Mr. Maurer is a Certified Healthcare Facilities Manager (CHFM), a Certified Healthcare Safety Professional (CHSP), member of the American Society for Healthcare Engineering (ASHE) and the Healthcare Engineers Society of Northern Illinois (HESNI), serving on HESNI's Board since 2008. He also is a Trustee for his local library district.

Mr. Maurer received his Bachelor's degree in Business Management from Olivet Nazarene University in Bourbonnais, Illinois.

Mr. Maurer is an employee of The Joint Commission.
Appendix B: Post-Test

To be eligible for CE credit, you MUST view the video presentation and read the Resource Guide first. Then complete the post-test at http://twnlms.com/ by the due date listed online.

1. The Life Safety (LS) chapter in the Comprehensive Accreditation Manual for Hospitals primarily focuses on ______.
   a. measures that hospitals must take to protect occupants from the dangers of fire
   b. organizational activities that keep the care environment safe
   c. environmental emergency situations
   d. construction projects

2. EP10 of Standard LS.02.01.35 relates to ______.
   a. Fire Code standby procedures
   b. Interim Life Safety Measures
   c. grease-producing cooking devices
   d. None of the above.

3. Building and fire protection features are designed and maintained to minimize the effects of fire, smoke, and heat is Joint Commission Standard ______.
   a. LS.02.01.35
   b. LS.02.01.10
   c. EC.02.03.05
   d. EC.02.02.01

4. Any and all penetrations in fire-rated wall assemblies must be sealed with approved fire rated materials.
   a. True
   b. False

5. According to The Joint Commission's Life Safety chapter, Life Safety Code drawings must clearly display ______.
   a. a legend that clearly identifies features of fire safety (for example, fire extinguishers, exit signs)
   b. areas of the building that are fully sprinklered (if the building is partially sprinklered)
   c. locations of all hazardous storage areas
   d. All of the above.

6. Suites of patient sleeping rooms are limited to how much square footage?
   a. 10,000
   b. 2,500
   c. 5,000
   d. 15,000

7. Direct care staff should never be involved in the correction of Environment of Care deficiencies because they are not licensed engineers.
   a. True
   b. False
8. An item may be stored in a stairwell only if it _____.
   a. is less than 10 cubic feet in size
   b. supports the use of the stairs
   c. is attached securely to a wall
   d. is identified by a large red sign

9. A fire rated door must have a self or automatic closing device.
   a. True
   b. False

10. Floors or compartments in a building must have how many exits located remotely from each other?
    a. Two
    b. Three
    c. Four
    d. None of the above.
Appendix C: Resources and Related Information

Electronic Resources

The Joint Commission: http://www.jointcommission.org
Joint Commission Resources: http://www.jcrinc.com/

NOTE: The Internet is an ever-evolving environment and links are subject to change without notice.
Appendix D: Continuing Education Credit Information

Accreditation Council for Continuing Medical Education

Joint Commission Resources (JCR) is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians. JCR takes responsibility for the content, quality, and scientific integrity of this CME activity. JCR designates this educational activity for the listed contact hours of AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

American Nurses Credentialing Center's Commission on Accreditation

JCR is also accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation. JCR designates this continuing nursing education activity for the listed contact hours.

JCR is a provider approved by the California Board of Registered Nursing, provider number CEP 6381 for the listed contact hours.

American College of Healthcare Executives

Joint Commission Resources is authorized to award the listed contact hours of pre-approved ACHE Qualified Education credit for this program toward advancement, or re-certification in the American College of Healthcare Executives. Participants in this program wishing to have the continuing education hours applied toward ACHE Qualified Education credit should indicate their attendance when submitting application to the American College of Healthcare Executives for advancement or re-certification.

National Association for Healthcare Quality

This activity has been approved by the National Association for Healthcare Quality (NAHQ) for 1.0 Certified Professional Healthcare Quality (CPHQ) CE credit.

Successful completion of this CE activity includes the following:

• View the presentation and read the accompanying Resource Guide.
• Complete the online Evaluation Form and Post Test.
• A CE certificate/statement of credit can be printed online following successful completion of the Post Test and the Evaluation Form.

NOTE: This information applies to The Joint Commission Resources Quality & Safety Network program titled, Environment of Care: Life Safety Code Issues, originally presented on Thursday, October 25, 2012 from 2:00 - 3:00 p.m. ET.

There is no individual participant fee for this educational activity.
## Appendix E: Discipline Codes: Instructions

Some of our programs are accredited for more than one discipline. To ensure that we issue each participant a certificate by the appropriate accrediting body, we ask that you supply us with the following information:

1. The two-digit discipline code
2. Followed by the position code

Example: For a medical doctor, use: 10 MD

<table>
<thead>
<tr>
<th>Discipline</th>
<th>Disciplne Code</th>
<th>Position Code</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physician (CME)</td>
<td>10 MD</td>
<td></td>
<td>Medical Doctor</td>
</tr>
<tr>
<td></td>
<td>MDFP MD-Family Practice</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDPS MD-Psychiatrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDPH MD-Public Health Certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDPP MD-Public Psychiatry Certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDAC MD-Area Clinical Needs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDMF MD-Medical Faculty Certificate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MSP MD-Medical Staff Physician</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>MDLL MD-Limited License</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>DO Doctor of Osteopathy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>12 HA</td>
<td></td>
<td>Hospital Administrator</td>
</tr>
<tr>
<td></td>
<td>ADM LTC</td>
<td></td>
<td>Administrator</td>
</tr>
<tr>
<td></td>
<td>OA</td>
<td></td>
<td>Other Administrator</td>
</tr>
<tr>
<td>Pharmacy</td>
<td>13 PH</td>
<td></td>
<td>Pharmacist (PharmD)</td>
</tr>
<tr>
<td></td>
<td>PHN</td>
<td></td>
<td>Pharmacist, Nuclear</td>
</tr>
<tr>
<td></td>
<td>PHC</td>
<td></td>
<td>Pharmacist, Consultant</td>
</tr>
<tr>
<td></td>
<td>PA</td>
<td></td>
<td>Pharmacy Technician</td>
</tr>
<tr>
<td>Dietary</td>
<td>14 RD</td>
<td></td>
<td>Registered Dietitian/Nutritionist</td>
</tr>
<tr>
<td></td>
<td>NC</td>
<td></td>
<td>Nutrition Counselor</td>
</tr>
<tr>
<td></td>
<td>DTR</td>
<td></td>
<td>Dietetic Technician</td>
</tr>
<tr>
<td>Dietary Manager</td>
<td>15 DOD</td>
<td></td>
<td>Dietary Manager</td>
</tr>
<tr>
<td>Counseling</td>
<td>16 MHC</td>
<td></td>
<td>Mental Health Counselor, Licensed</td>
</tr>
<tr>
<td></td>
<td>SW</td>
<td></td>
<td>Social Worker, Licensed</td>
</tr>
<tr>
<td></td>
<td>OCT</td>
<td></td>
<td>Other Counselor/Therapist</td>
</tr>
<tr>
<td></td>
<td>MFT</td>
<td></td>
<td>Marriage/Family Therapist, Licensed</td>
</tr>
<tr>
<td>Laboratory</td>
<td>17 LTG</td>
<td></td>
<td>Laboratory Technologist/Professional</td>
</tr>
<tr>
<td></td>
<td>LT</td>
<td></td>
<td>Laboratory Technician</td>
</tr>
<tr>
<td></td>
<td>LS</td>
<td></td>
<td>Laboratory Supervisor</td>
</tr>
<tr>
<td></td>
<td>LD</td>
<td></td>
<td>Laboratory Director</td>
</tr>
<tr>
<td>Physical Therapy</td>
<td>18 PT</td>
<td></td>
<td>Physical Therapist</td>
</tr>
<tr>
<td></td>
<td>PTA</td>
<td></td>
<td>Physical Therapy Assistant</td>
</tr>
<tr>
<td>Occupational Therapy</td>
<td>19 OT</td>
<td></td>
<td>Occupational Therapist</td>
</tr>
<tr>
<td></td>
<td>OTA</td>
<td></td>
<td>Occupational Therapy Assistant</td>
</tr>
<tr>
<td>Respiratory Therapy</td>
<td>20 RT</td>
<td></td>
<td>Respiratory Therapist, Registered</td>
</tr>
<tr>
<td></td>
<td>RTC</td>
<td></td>
<td>Respiratory Therapist, Certified</td>
</tr>
<tr>
<td></td>
<td>RPNC</td>
<td></td>
<td>Resp. Practitioner, Non-Critical Care</td>
</tr>
<tr>
<td></td>
<td>RPCC</td>
<td></td>
<td>Resp. Practitioner, Critical Care</td>
</tr>
<tr>
<td>Medical Records</td>
<td>21 RHA</td>
<td></td>
<td>Health Information Administrator</td>
</tr>
<tr>
<td></td>
<td>RHT</td>
<td></td>
<td>Health Information Technician</td>
</tr>
<tr>
<td></td>
<td>CCS</td>
<td></td>
<td>Coding Specialist</td>
</tr>
<tr>
<td></td>
<td>CCP</td>
<td></td>
<td>Coding Specialist, Physician-Based</td>
</tr>
<tr>
<td>Radiology</td>
<td>22 RAD</td>
<td></td>
<td>Radiologic Technologist</td>
</tr>
<tr>
<td>Sonography</td>
<td>23 MS</td>
<td></td>
<td>Medical Sonographer</td>
</tr>
<tr>
<td>Athletic Training</td>
<td>24 AT</td>
<td></td>
<td>Athletic Trainer</td>
</tr>
<tr>
<td>HC Quality</td>
<td>25 HQP</td>
<td></td>
<td>Healthcare Quality Professional</td>
</tr>
<tr>
<td>Activity Professional</td>
<td>26 ADP</td>
<td></td>
<td>Profession Activity Director</td>
</tr>
<tr>
<td></td>
<td>ADC</td>
<td></td>
<td>Activity Director</td>
</tr>
<tr>
<td></td>
<td>AAC</td>
<td></td>
<td>Activity Assistant</td>
</tr>
<tr>
<td></td>
<td>ACC</td>
<td></td>
<td>Activity Consultant</td>
</tr>
<tr>
<td>Nurse (CNE)</td>
<td>30 RN</td>
<td></td>
<td>Registered Nurse</td>
</tr>
<tr>
<td></td>
<td>ARNP</td>
<td></td>
<td>Advanced RN Practitioner</td>
</tr>
<tr>
<td></td>
<td>NP</td>
<td></td>
<td>Nurse Practitioner</td>
</tr>
<tr>
<td></td>
<td>LPN</td>
<td></td>
<td>Licensed Practical Nurse (or LVN)</td>
</tr>
<tr>
<td></td>
<td>ON</td>
<td></td>
<td>Other Nursing Professional</td>
</tr>
<tr>
<td>Psychology</td>
<td>33 PSY</td>
<td></td>
<td>Psychologist (non-MD)</td>
</tr>
<tr>
<td></td>
<td>PSYL</td>
<td></td>
<td>Psychologist, Limited License</td>
</tr>
<tr>
<td>Case Mgmt</td>
<td>35 CCM</td>
<td></td>
<td>Certified Case Manager</td>
</tr>
<tr>
<td>Nursing Assistant</td>
<td>45 CNA</td>
<td></td>
<td>Certified Nursing Assistant</td>
</tr>
<tr>
<td></td>
<td>RA</td>
<td></td>
<td>Restorative Care Aide</td>
</tr>
<tr>
<td></td>
<td>HS A</td>
<td></td>
<td>Health Support Aide</td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td></td>
<td>Nurse Aide, Non-certified</td>
</tr>
<tr>
<td></td>
<td>NT</td>
<td></td>
<td>Nursing Technician</td>
</tr>
<tr>
<td>Emergency Medical Services</td>
<td>46 CFR</td>
<td></td>
<td>First Responder</td>
</tr>
<tr>
<td></td>
<td>EMTB</td>
<td></td>
<td>EMT, Basic Level/EMT1</td>
</tr>
<tr>
<td></td>
<td>EMTI</td>
<td></td>
<td>EMT, Intermediate Level/EMT2/EMT3</td>
</tr>
<tr>
<td></td>
<td>EMTP</td>
<td></td>
<td>EMT, Paramedic Level/EMT4</td>
</tr>
<tr>
<td></td>
<td>OTH</td>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>Health Unit Coor</td>
<td>55 CHUC</td>
<td></td>
<td>Health Unit Coordinator, Certified</td>
</tr>
<tr>
<td>Other</td>
<td>27 OTH</td>
<td></td>
<td>Other</td>
</tr>
</tbody>
</table>

© 2012 Joint Commission Resources
Appendix F: JCR Quality & Safety Network Contact Information

General information, customer service issues, or program reception problems?
If you have questions or need technical assistance, please contact the JCRQSN Customer Service Team via e-mail at support@jcrqsn.com or call toll-free 1-888-219-4678

To provide feedback or comment on JCRQSN educational programming
Please contact:
George Riccio
Associate Director of Video and Satellite Service
Joint Commission Resources 630-792-5428

Continuing education questions?
Please contact:
JCRQSN Continuing Education Support Team 1-888-219-4678
support@jcrqsn.com

Questions about standards?
Standards Interpretation Group 630-792-5900

Questions about JCR education or other resources?
JCR Customer Service Center 877-223-6866

VA Knowledge Network Questions?
Contact Joshua Smith 562-826-5505, extension 3962