

## Management of the Environment of Care

### Overview

The **goal** of this function is to provide a safe, functional, supportive, and effective environment for patients, staff, and other individuals in the organization. This is crucial to providing quality patient care, achieving good outcomes, and improving patient safety. Achieving this goal depends on performing the following processes:

- Performing strategic and ongoing master planning by organization leaders for the space, clear circulation of occupants, equipment, supportive environment, and resources needed to safely and effectively support the services provided. Planning and designing the environment are consistent with the organization's mission and vision and the patient's physical condition/health, cultural background, age, and cognitive abilities.
- Educating staff about the role of the environment in safely, sensitively, and effectively supporting patient care. The organization educates staff about the physical characteristics necessary for attaining such an environment, and the processes for monitoring, maintaining, and reporting on the organization's environment of care.
- Developing standards to measure staff performance and organization performance in managing and improving the environment of care.
- Implementing plans to create and manage the organization's environment of care. An Information Collection and Evaluation System (ICES) is developed and used to continuously measure, assess, and improve the status of the environment of care.

“Environment of care” refers to a variety of key elements and issues that contribute to creating the way the space feels and works for patients, families, staff, and others experiencing the health care delivery system. Certain key elements and issues that can be significant in their ability to positively influence patient outcomes and satisfaction and improve patient safety include the following:

- Light (both natural and artificial)
- Privacy (visual and auditory)
- Space size and configuration appropriate and consistent with the clinical philosophy
- Security
- Clarity of access (both exterior and interior circulation)
- Color

- Efficient layouts that support staffing and overall functional operation

When appropriately designed into and managed as part of the physical environment, these elements create safe, welcoming, and comfortable environments that support and maintain patient dignity and personhood, allow ease of interaction, reduce stressors, and encourage family participation in care delivery.

These key elements and issues need to be incorporated into outpatient settings such as clinics, counseling centers, preadmission testing offices, infirmaries, same-day surgery centers, dialysis centers, or imaging centers. Such environments are made up of three basic components: building(s), equipment, and people. Effectively managing the environment of care includes using processes and activities to do the following:

- Reduce and control environmental hazards and risks
- Prevent accidents and injuries
- Maintain safe conditions for patients, staff, and others coming to the organization's facilities
- Maintain an environment that is sensitive to patient needs for comfort, social interaction, and positive distraction
- Maintain an environment that minimizes unnecessary environmental stresses for patients, staff, and others coming to the organization's facilities

The standards in this chapter focus on how everyone in the organization participates in the processes and activities that make the care environment safe and effective. They also address leaders' responsibility for identifying and responding to the care environment needs and allocating appropriate space, equipment, and resources to safely and effectively support the organization's services.

Some standards in this chapter recognize that certain settings where care, treatment, or services are provided have more risk than others. Therefore, some requirements are noted as applying only to certain "occupancy<sup>1</sup> types". The following occupancy definitions are used in this chapter:

- **Ambulatory health care occupancy** An occupancy used to provide to four or more patients at the same time either (1) outpatient services or treatment that render them incapable of taking actions for self-preservation under emergency conditions without the assistance of others; or (2) anesthesia that renders them incapable of taking actions for self-preservation under emergency conditions without the assistance of others.

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<sup>1</sup> **occupancy** The purpose for which a building or portion thereof is used or intended to be used

- **Business occupancy** An occupancy used to provide outpatient services or treatment that do not meet the criteria in the ambulatory health care occupancy definition.

**Note 1:** *The standards in this chapter do not prescribe any particular structure (such as a safety committee), specific individual (such as one employee hired to be a safety officer), or format for the required designs and planning activities.*

**Note 2:** *The standards do not require the Statement of Conditions™ compliance document to be completed by anyone other than an employee of the organization. This statement is the basis for corrective actions needed to make the environment compliant with the requirements of the Life Safety Code® (LSC), NFPA 101®.*

**Note 3:** *The standards in this chapter require each organization to develop a written plan for the following:*

1. *Safety management (EC.1.10)*
2. *Security management (EC.2.10)*
3. *Hazardous materials and waste management (EC.3.10)*
4. *Emergency management (EC.4.10)*
5. *Fire safety (EC.5.10)*
6. *Medical equipment management (EC.6.10)*
7. *Utilities management (EC.7.10)*

*If an organization has multiple sites, it may have separate management plans for each location, or it may choose to have one comprehensive set of plans. In either case, the organization must address specific risks and the unique conditions at each of its sites.*

## Standards

The following is a list of all standards for this function. They are presented here for your convenience without footnotes or other explanatory text. If you have a question about a term used here, please check the Glossary.

### Planning and Implementation Activities

**EC.1.10** The organization manages safety risks.

**EC.1.20** The organization maintains a safe environment.

**EC.1.30** The organization develops and implements a policy to prohibit smoking except in specified circumstances.

**EC.2.10** The organization identifies and manages its security risks.

**EC.3.10** The organization manages its hazardous materials and waste risks.

**EC.4.10** The organization addresses emergency management.

**EC.4.20** The organization conducts drills regularly to test emergency management.

**EC.5.10** The organization manages fire safety risks.

**EC.5.20** Newly constructed and existing environments of care are designed and maintained to comply with the *Life Safety Code*<sup>®</sup>.

**EC.5.30** The organization conducts fire drills regularly.

**EC.5.40** The organization maintains fire-safety equipment and building features.

**EC.5.50** The organization develops and implements activities to protect occupants during periods when a building does not meet the applicable provisions of the *Life Safety Code*<sup>®</sup>.

**EC.6.10** The organization manages medical equipment risks.

**EC.6.20** Medical equipment is maintained, tested, and inspected.

**EC.7.10** The organization manages its utility risks.

**EC.7.20** The organization provides a reliable emergency electrical power source.

**EC.7.30** The organization maintains, tests, and inspects its utility systems.

**EC.7.40** The organization maintains, tests, and inspects its emergency power systems.

**EC.7.50** The organization maintains, tests, and inspects its medical gas and vacuum systems.

**EC.8.10** The organization establishes and maintains an appropriate environment.

**EC.8.20** Not applicable

**EC.8.30** The organization manages the design and building of the environment when it is renovated, altered, or newly created.

**Measuring and Improving Activities**

**EC.9.10** The organization monitors conditions in the environment of care.

**EC.9.20** The organization analyzes identified environment of care issues and develops recommendations for resolving them.

**EC.9.30** The organization improves the environment of care.

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## **Standards, Rationales, and Elements of Performance**

### **Planning and Implementation Activities**

No organization can ensure that patients, staff, and others coming to the organization's facilities will never suffer an accidental injury. However, organizations can minimize avoidable risks and injuries through sound planning, resource allocation (see "Leadership" chapter), effective training (see "Management of Human Resources" chapter), implementation, and ongoing monitoring and improvement of risk reduction activities. These activities can be accomplished through management process, staff activities, and/or technology.

### **Standard EC.1.10**

The organization manages safety risks.

### **Rationale for EC.1.10**

Each organization has inherent safety risks associated with providing services for patients, the performance of daily activities by staff, and the physical environment in which services occur. It is important that each organization identifies these risks and plans and implements processes to minimize the likelihood of those risks causing incidents.

### **Elements of Performance for EC.1.10**

1. The organization develops and maintains a written management plan describing the processes it implements to effectively manage the environmental safety of patients, staff, and other people coming to the organization's facilities.
2. The organization identifies a person(s), as designated by leadership, to coordinate the development, implementation, and monitoring of the safety management activities.
3. The organization identifies a person(s) to intervene whenever conditions immediately threaten life or health or threaten damage to equipment or buildings.
4. The organization conducts proactive risk assessments that evaluate the potential adverse impact of buildings, grounds, equipment, occupants, and internal physical systems on the safety and health of patients, staff, and other people coming to the organization's facilities.

5. The organization uses the risks identified to select and implement procedures and controls to achieve the lowest potential for adverse impact on the safety and health of patients, staff, and other people coming to the organization's facilities.

6. The organization establishes safety policies and procedures that are distributed, practiced, enforced, and reviewed as frequently as necessary, but at least every three years.

7. Not applicable

8. The organization ensures responses to product safety recalls by appropriate organization representatives.

9. The organization ensures that all grounds and equipment are maintained appropriately.

#### **Standard EC.1.20**

The organization maintains a safe environment.

#### **Rationale for EC.1.20**

It is essential that the organization conduct periodic environmental tours to determine if its current processes for managing patient, public, and staff safety risks are being practiced correctly and are effective. These tours can also be used to assess staff knowledge and behaviors, identify new or altered risks in areas where construction or changes in services have occurred, and identify opportunities to improve the environment.

#### **Elements of Performance for EC.1.20**

1. The organization conducts environmental tours to identify environmental deficiencies, hazards, and unsafe practices.

2. The organization conducts environmental tours at least every six months in all areas where patients are served.

3. Not applicable

4. The organization conducts environmental tours at least annually in areas where patients are not served.

### **Standard EC.1.30**

The organization develops and implements a policy to prohibit smoking except in specified circumstances.

#### **Rationale for EC.1.30**

This standard is intended to reduce the following risks:

- To people who smoke, including possible adverse effects on care, treatment, or services.
- Of passive smoking for others
- Of fire

#### **Elements of Performance for EC.1.30**

1. The organization develops a policy regarding smoking in all areas of all building(s) under the organization's control.
2. Not applicable
3. Not applicable
4. Not applicable
5. Not applicable
6. The organization identifies and implements a process(es) for monitoring compliance with the policy.
7. The organization develops strategies to eliminate the incidence of policy violations when identified.

### **Standard EC.2.10**

The organization identifies and manages its security risks.

#### **Rationale for EC.2.10**

It is essential that an organization manages the physical and personal security of patients, staff (including addressing the risks of violence in the workplace), and individuals coming to the organization's facilities. In addition, security of the established environment, equipment, supplies, and information is also important.

#### **Elements of Performance for EC.2.10**

1. The organization develops and maintains a written management plan describing the processes it implements to effectively manage the security of patients, staff, and other people coming to the organization's facilities.
2. The organization identifies a person(s), as designated by leadership, to coordinate the development, implementation, and monitoring of the security management activities.
3. The organization conducts proactive risk assessments that evaluate the potential adverse impact of the external environment and the services provided on the security of patients, staff, and other people coming to the organization's facilities.<sup>2</sup>
4. The organization uses the risks identified to select and implement procedures and controls to achieve the lowest potential for adverse impact on security.
5. The organization identifies, as appropriate, patients, staff, and other people entering the organization's facilities.
6. The organization controls access to and egress from security-sensitive areas, as determined by the organization.
7. The organization identifies and implements security procedures that address actions taken in the event of a security incident.
8. Not applicable
9. The organization identifies and implements security procedures that address handling of situations involving VIPs or the media.

### **Standard EC.3.10**

The organization manages its hazardous materials and waste<sup>3</sup> risks.

### **Rationale for EC.3.10**

Organizations must identify materials they use that need special handling and implement processes to minimize the risks of their unsafe use and improper disposal.

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<sup>2</sup> The potential for workplace violence is considered during the risk assessment.

<sup>3</sup> **hazardous materials (HAZMAT) and wastes** Materials whose handling, use, and storage are guided or regulated by local, state, or federal regulation. Examples include OSHA's Regulations for Bloodborne Pathogens (regarding the blood, other infectious materials, contaminated items which would release blood or other infectious materials, or contaminated sharps), the Nuclear Regulatory Commission's regulations for handling and disposal of radioactive waste, management of hazardous vapors (such as glutaraldehyde, ethylene oxide, and nitrous oxide), chemicals regulated by the EPA, Department of Transportation requirements, and hazardous energy sources (for example, ionizing or non-ionizing radiation, lasers, microwaves, and ultrasound).

### **Elements of Performance for EC.3.10**

1. The organization develops and maintains a written management plan describing the processes it implements to effectively manage hazardous materials and wastes.
2. The organization creates and maintains an inventory that identifies hazardous materials and waste used, stored, or generated using criteria consistent with applicable law and regulation (for example, the Environmental Protection Agency [EPA] and the Occupational Safety and Health Administration [OSHA]).
3. The organization establishes and implements processes for selecting, handling, storing, transporting, using, and disposing of hazardous materials and waste from receipt or generation through use and/or final disposal, including managing the following:
  - Chemicals
  - Chemotherapeutic materials
  - Radioactive materials
  - Infectious and regulated medical wastes, including sharps
4. The organization provides adequate and appropriate space and equipment for safely handling and storing hazardous materials and waste.
5. The organization monitors and disposes of hazardous gases and vapors.
6. The organization identifies and implements emergency procedures that include the specific precautions, procedures, and protective equipment used during hazardous materials and waste spills or exposures.
7. The organization maintains documentation, including required permits, licenses, and adherence to other regulations.
8. The organization maintains required manifests for handling hazardous materials and waste.
9. The organization properly labels hazardous materials and waste.
10. The organization effectively separates hazardous materials and waste storage and processing areas from other areas of the facility.

### **Standard EC.4.10**

The organization addresses emergency management.

### **Rationale for EC.4.10**

An emergency<sup>4</sup> in the organization or its community could suddenly and significantly affect the need for the organization's services or its ability to provide those services. Therefore, an organization needs to have an emergency management plan that comprehensively describes its approach to emergencies in the organization or in its community.

### **Elements of Performance for EC.4.10**

1. The organization conducts a hazard vulnerability analysis<sup>5</sup> to identify potential emergencies that could affect the need for its services or its ability to provide those services.
2. The organization establishes the following with the community:
  - Priorities among the potential emergencies identified in the hazard vulnerability analysis
  - The organization's role in relation to a communitywide emergency management program
  - An "all-hazards" command structure within the organization that links with the community's command structure
3. The organization develops and maintains a written emergency management plan describing the process for disaster readiness and emergency management, and implements it when appropriate.
4. At a minimum, an emergency management plan is developed with the involvement of the organization's leaders.
5. The plan identifies specific procedures that describe mitigation,<sup>6</sup> preparedness,<sup>7</sup> response, and recovery strategies, actions, and responsibilities for each priority emergency.

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<sup>4</sup>**emergency** A natural or manmade event that significantly disrupts the environment of care (for example, damage to the organization's building[s] and grounds due to severe winds, storms, or earthquakes) that significantly disrupts care and treatment (for example, loss of utilities such as power, water, or telephones due to floods, civil disturbances, accidents, or emergencies within the organization or in its community); or that results in sudden, significantly changed, or increased demands for the organization's services (for example, bioterrorist attack, building collapse, plane crash in the organization's community). Some emergencies are called "disasters" or "potential injury creating events" (PICES).

<sup>5</sup>**hazard vulnerability analysis:** The identification of potential emergencies and the direct and indirect effects these emergencies may have on the organization's operations and the demand for its services

<sup>6</sup>**mitigation activities** Those activities an organization undertakes in attempting to lessen the severity and impact of a potential emergency

<sup>7</sup>**preparedness activities** Those activities an organization undertakes to build capacity and identify resources that may be used if an emergency occurs

6. The plan provides processes for initiating the response and recovery phases of the plan, including a description of how, when, and by whom the phases are to be activated.

7. The plan provides processes for notifying staff when emergency response measures are initiated.

8. The plan provides processes for notifying external authorities of emergencies, including possible community emergencies identified by the organization.

9. The plan provides processes for identifying and assigning staff to cover all essential staff functions under emergency conditions.

10. The plan provides processes for managing the following under emergency conditions:

- Activities related to care, treatment, or services (for example, scheduling, modifying, or discontinuing services; controlling information about patients; referrals; transporting patients)
- Logistics relating to critical supplies (for example, supplies, food, linen, water)
- Security (for example, access, crowd control, traffic control)

11. When required by the organization's role within its community, the plan provides processes for establishing the means and methods to continue care, treatment, and services during the potential emergencies.

12. The plan provides processes for evacuating the entire facility (both horizontally and, when applicable, vertically) when the environment cannot support adequate care, treatment, and services.

13. Not applicable

14. The plan provides processes for identifying care providers and other personnel during emergencies.

15. Not applicable

16. Not applicable

17. Not applicable

18. The plan identifies backup internal and external communication systems in the event of failure during emergencies.

19. The plan identifies alternate roles and responsibilities of staff during emergencies, including to whom they report in the organization's command structure and, when activated, in the community's command structure.

20. The plan identifies an alternative means of meeting essential building utility needs when the organization is designated by its emergency management plan to provide continuous service during an emergency (for example, electricity, water, ventilation, fuel sources, medical gas/vacuum systems).

21. The plan identifies means for radioactive, biological, and chemical isolation and decontamination.

#### **Standard EC.4.20**

The organization conducts drills regularly to test emergency management.

#### **Elements of Performance for EC.4.20**

1. The organization tests the response phase of its emergency management plan twice a year, either in response to an actual emergency or in planned drills.<sup>8</sup>

***Note:** Staff in each freestanding building classified as a business occupancy (as defined by the Life Safety Code®) that does not offer emergency services nor is community-designated as a disaster-receiving station need to participate in only one emergency preparedness drill annually. Staff in areas of the building that the organization occupies must participate in this drill.*

2. Not applicable

3. Organizations that offer emergency services or are community-designated disaster receiving stations must conduct at least one drill a year that includes an influx of volunteers or simulated patients.

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<sup>8</sup> Drills that involve packages of information that simulate patients, their families, and the public are acceptable.

4. Not applicable

5. Not applicable

6. All drills are critiqued to identify deficiencies and opportunities for improvement.

**Standard EC.5.10**

The organization manages fire safety risks.

**Elements of Performance for EC.5.10**

1. The organization develops and maintains a written management plan describing the processes it implements to effectively manage fire safety.

2. The organization identifies and implements proactive processes for protecting patients, staff, and others coming to the organization's facilities, as well as protecting property from fire, smoke, and other products of combustion.

3. The organization identifies and implements processes for regularly inspecting, testing, and maintaining fire-protection and fire-safety systems, equipment, and components.

4. The organization develops and implements a fire-response plan that addresses the following:

- Facilitywide fire response
- Area-specific needs including fire-evacuation routes
- Specific roles and responsibilities of staff, licensed independent practitioners (LIPs), and volunteers at a fire's point of origin
- Specific roles and responsibilities of staff, LIPs, and volunteers away from a fire's point of origin
- Specific roles and responsibilities of staff, LIPs, and volunteers in preparing for building evacuation

5. The organization reviews proposed acquisitions of bedding, window draperies, and other curtains,

furnishings, decorations, and other equipment for fire safety.

**Note:** *Applies to ambulatory surgery settings only.*

### **Standard EC.5.20**

Newly constructed and existing environments of care are designed and maintained to comply with the *Life Safety Code*<sup>®9</sup>.

### **Rationale for EC.5.20**

The *Life Safety Code*<sup>®</sup> (*LSC*) requires that a building is designed, constructed, and maintained with the capability of being fire safe. When undertaking the design of a newly remodeled building, the organization should also satisfy any requirements of others (local, state, or federal) that may be more stringent than the *LSC*.

**Note 1:** *This standard does not apply to the following facilities:*

- *Classified as a business occupancy by the LSC that are freestanding buildings*
- *Classified as a business occupancy by the LSC that are connected to a health care occupancy, but are separated by a two-hour rated fire barrier and do not serve as a required means of egress from the health care occupancy*
- *Housing three or fewer patients*

**Note 2:** *This standard applies to all ambulatory surgical centers (ASC) seeking accreditation for Medicare certification purposes. These facilities must meet the Ambulatory Health Care occupancy requirements of the LSC.*

### **Elements of Performance for EC.5.20**

1. Each building in which patients are housed or receive care, treatment, or services complies with the *LSC*, NFPA 101<sup>®</sup> 2000;

**OR**

2. Each building in which patients are housed or receive care, treatment, or services does not comply with the *LSC*, but the resolution of all deficiencies is evidenced through the following:

- An equivalency approved by the Joint Commission
- or

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<sup>9</sup> *Life Safety Code*<sup>®</sup> is a registered trademark of the National Fire Protection Association, Quincy, Massachusetts.

- Continued progress in completing an acceptable Plan For Improvement (Statement of Conditions™, Part 4)

3. A current, organizationwide Statement of Conditions™ compliance document (SOC™)<sup>10</sup> has been prepared.

**Note:** *You can obtain a copy of the SOC™ from our Web site at [www.jcaho.org](http://www.jcaho.org) or by calling Customer Service at 630/792-5900. You may make as many copies of this SOC™ as you wish. However, remember to keep the original blank for future copying.*

### **Standard EC.5.30**

The organization conducts fire drills regularly.

### **Rationale for EC.5.30**

The development of a fire-response plan is an important part of achieving a fire-safe environment (see EC.5.10). It is important that this plan be regularly evaluated during implementations (in drill scenarios or actual fire situations) for performance of the fire-safety equipment and staff.

Implementation of the plan should be realistic and held at varied times. Actual evacuation of patients during the drills is not required.

### **Elements of Performance for EC.5.30**

1. Fire drills are conducted quarterly in all buildings defined by the LSC<sup>®</sup> as the following:

- Ambulatory health care occupancy

2. Fire drills are conducted annually in all freestanding buildings classified as a business occupancy as defined by the LSC where patients are seen or treated.

**Note:** *In leased or rented facilities, only staff in areas of the building that the organization occupies must participate in such drills.*

**Note:** *All ambulatory surgical centers (ASCs) seeking accreditation for Medicare certification*

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<sup>10</sup> **Statement of Conditions™ (SOC™) compliance document** A proactive document that helps an organization do a critical self-assessment of its current level of compliance and describe how to resolve any *Life Safety Code*<sup>®</sup> (LSC) deficiencies. The SOC™ was created to be a living, ongoing management tool that should be used in a management process that continually identifies, assesses, and resolves LSC deficiencies.

*purposes must conduct fire drills quarterly.*

3. Not applicable

4. At least 50% of the required drills are unannounced.

5. Not applicable

6. All fire drills are critiqued to identify deficiencies and opportunities for improvement.

7. The effectiveness of fire-response training according to the fire plan is evaluated at least annually.

8. During fire drills, staff knowledge is evaluated including the following:

- When and how to sound fire alarms (where such alarms are available)
- When and how to transmit for offsite fire responders
- Containment of smoke and fire
- Transfer of patients to areas of refuge
- Fire extinguishment
- Specific fire-response duties
- Preparation for building evacuation

#### **Standard EC.5.40**

The organization maintains fire-safety equipment and building features.

**Note 1:** *This standard does not require organizations to have the types of fire-safety equipment and building features discussed below. However, if these types of equipment or features exist within the organization, then the following maintenance, testing, and inspection requirements apply.*

**Note 2:** *Organizations that offer care, treatment, or services in leased facilities need to communicate maintenance expectations for building equipment not under their control to their landlord through contractual language, lease agreements, memos, and so forth. These organizations are not required to possess maintenance documentation, but must only have access to such documentation as needed and during survey. It is also important that the landlord communicate to the organization any building equipment problems identified that could negatively affect the safety or health of patients,*

*staff, and other people coming to the organization, as well as the landlord's plan to resolve such issues.*

#### **Elements of Performance for EC.5.40**

1. Documentation is available that for initiating devices, fire-detection and alarm equipment is tested as follows:<sup>11</sup>

- All supervisory signal devices (except valve tamper switches) are tested at least quarterly
- All valve tamper switches and water flow devices are tested at least semiannually
- All duct detectors, electromechanical releasing devices, heat detectors, manual fire alarm boxes, and smoke detectors are tested at least annually

2. Documentation is available that occupant alarm notification devices, including all audible devices, speakers, and visible devices, are tested at least annually.<sup>23</sup>

3. Documentation is available that off-premises emergency forces notification transmission equipment is tested at least quarterly.<sup>23</sup>

4. Documentation is available that for water-based automatic fire-extinguishing systems, all fire pumps are tested at least weekly under no-flow condition.<sup>12</sup>

5. Documentation is available that for water-based automatic fire-extinguishing systems, all water-storage tank high- and low-water level alarms are tested at least semiannually.

6. Documentation is available that for water-based automatic fire-extinguishing systems, all water-storage tank low-water temperature alarms (during cold weather only) are tested at least monthly.

7. Documentation is available that for water-based automatic fire-extinguishing systems, main drain tests are conducted at least annually at all system risers.

8. Documentation is available that for water-based automatic fire-extinguishing systems, all fire

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<sup>11</sup> For additional guidance, see NFPA 72-1999 edition (Table 7-3.2).

<sup>12</sup> For additional guidance, see NFPA 25-1998 edition.

department connections are inspected quarterly.

9. For water-based automatic fire-extinguishing systems, all fire pumps are tested at least annually under flow.

10. Kitchen automatic fire-extinguishing systems are inspected for proper operation at least semiannually (actual discharge of the fire-extinguishing system is not required).

11. Carbon dioxide and other gaseous automatic fire-extinguishing systems are tested for proper operation at least annually (actual discharge of the fire-extinguishing system is not required).

12. Documentation is available that all portable fire extinguishers<sup>13</sup> are clearly identified, inspected at least monthly, and maintained at least annually.

13. Documentation is available that all standpipe occupant hoses are hydrostatically tested five years after installation and at least every three years thereafter;<sup>14</sup> and systems receive water-flow tests at least every five years.<sup>15</sup>

14. Documentation is available that all fire and smoke dampers are operated at least every four years (with fusible links removed where applicable) to verify that they fully close.<sup>16</sup>

15. Documentation is available that all automatic smoke-detection shutdown devices for air-handling equipment are tested at least annually.<sup>17</sup>

16. Documentation is available that all horizontal and vertical sliding and rolling fire doors are tested for proper operation and full closure at least annually.<sup>18</sup>

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<sup>13</sup> For additional guidance, see NFPA 10-1998 edition (sections 1-6, 4-3, and 4-4).

<sup>14</sup> For additional guidance, see NFPA 1962-1998 edition (section 2-3).

<sup>15</sup> For additional guidance, see NFPA 25-1998 edition.

<sup>16</sup> For additional guidance, see NFPA 90A-1999 edition (section 3-4.7).

<sup>17</sup> For additional guidance, see NFPA 90A-1999 edition (section 4-4.1).

<sup>18</sup> For additional guidance, see NFPA 80-1999 edition (section 15-2.4).

### **Standard EC.5.50**

The organization develops and implements activities to protect occupants during periods when a building does not meet the applicable provisions of the *Life Safety Code*®.

**Note 1:** *This standard does not apply to facilities classified as a business occupancy by the LSC.*

**Note 2:** *This standard does apply to all facilities classified as an ambulatory health care occupancy by the Life Safety Code® and all Ambulatory Surgical Centers (ASC) seeking accreditation for Medicare certification purposes.*

### **Rationale for EC.5.50**

When building code deficiencies are identified and cannot be immediately corrected or during renovation or construction activities, the safety of patients, staff, and other people coming to the organization's facilities is diminished. Organizations need to proactively identify administrative actions (for example, additional training, additional inspections, additional fire drills, and so on) to be taken if these scenarios arise.

### **Elements of Performance for EC.5.50**

1. Each organization develops a policy for using interim life safety measures (ILSMs).
2. The policy includes written criteria for evaluating various deficiencies and construction hazards to determine when and to what extent one or more of the following measures apply:
  - Ensuring that temporary construction partitions are smoke-tight and built of noncombustible or limited combustible materials that will not contribute to the development or spread of fire.
  - Providing additional fire-fighting equipment and training staff in its use.
  - Prohibiting smoking throughout the organization's buildings and in and near construction areas.
  - Developing and enforcing storage, housekeeping, and debris-removal practices that reduce the building's flammable and combustible fire load to the lowest feasible level.

- Conducting a minimum of two fire drills per quarter.
  - Increasing surveillance of buildings, grounds, and equipment, with special attention to excavations, construction areas, construction storage, and field offices.
  - Training staff to compensate for impaired structural or compartmentalization<sup>19</sup> features of fire safety.
  - Conducting organizationwide safety education programs to promote awareness of fire-safety building deficiencies, construction hazards, and ILSMs.
3. Each organization implements ILSMs as defined in its policy.

#### **Standard EC.6.10**

The organization manages medical equipment risks.

#### **Rationale for EC.6.10**

Medical equipment is a significant contributor to the quality of care. It is used in treatment, diagnostic activities, and monitoring of the patient. It is essential that the equipment be appropriate for the intended use; that staff, including LIPs, be trained to use the equipment safely and effectively; and that the equipment be maintained appropriately by qualified individuals.

#### **Elements of Performance for EC.6.10**

1. The organization develops and maintains a written management plan describing the processes it implements to manage the effective, safe, and reliable operation of medical equipment.
2. The organization identifies and implements a process(es) for selecting and acquiring medical equipment.<sup>20</sup>
3. The organization establishes and uses risk criteria for identifying, evaluating, and creating an inventory of equipment to be included in the medical management plan before the equipment is used.

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<sup>19</sup> **compartmentalization** The concept of using various building components (fire walls and doors, smoke barriers, fire rated floor slabs, and so forth ) to prevent the spread of fire and the production's combustion, and to provide a safe means of egress to an approved exit. The presence of these features varies depending upon the building occupancy classification.

<sup>20</sup> The acquisition process includes initially evaluating the condition and function of the equipment when received and evaluating the training of users before use on patients.

These criteria address the following:

- Equipment function (diagnosis, care, treatment, and monitoring)
- Physical risks associated with use
- Equipment incident history<sup>21</sup>

4. The organization identifies appropriate strategies for all equipment on the inventory for achieving effective, safe, and reliable operation of all equipment in the inventory.<sup>22</sup>

5. The organization defines intervals for inspecting, testing, and maintaining appropriate equipment on the inventory (that is, those pieces of equipment on the inventory benefiting from scheduled activities to minimize the clinical and physical risks) based upon criteria such as manufacturers' recommendations, risk levels, and current organization experience.

6. The organization identifies and implements processes for monitoring and acting on equipment hazard notices and recalls.

7. The organization identifies and implements processes for monitoring and reporting incidents in which a medical device is suspected or attributed to the death, serious injury, or serious illness of any patient, as required by the Safe Medical Devices Act of 1990.

8. The organization identifies and implements processes for emergency procedures that address the following:

- What to do in the event of equipment disruption or failure
- When and how to perform emergency clinical interventions when medical equipment fails
- Availability of backup equipment
- How to obtain repair services

### **Standard EC.6.20**

Medical equipment is maintained, tested, and inspected.

### **Elements of Performance for EC.6.20**

1. The organization documents a current, accurate, and separate inventory of all equipment identified in the medical equipment management plan, regardless of ownership.
2. The organization documents performance and safety testing of all equipment identified in the

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<sup>21</sup> The organization may choose not to use risk criteria to limit the types of equipment to be included in the medical equipment management plan, but rather include all medical equipment.

<sup>22</sup> Organizations may use different strategies as appropriate. For example, strategies such as predictive maintenance, interval-based inspections, corrective maintenance, or metered maintenance may be selected to ensure reliable performance.

medical management program before initial use.

3. The organization documents maintenance of equipment used for life support that is consistent with maintenance strategies to minimize clinical and physical risks identified in the equipment management plan (see EC.6.10).

4. The organization documents maintenance of non-life support equipment on the inventory that is consistent with maintenance strategies to minimize clinical and physical risks identified in the equipment management plan (see EC.6.10).

5. The organization documents performance testing of all sterilizers used.

6. The organization documents chemical and biological testing of water used in renal dialysis and other applicable tests based upon regulations, manufacturers' recommendations, and organization experience.

#### **Standard EC.7.10**

The organization manages its utility risks.

#### **Rationale for EC.7.10**

Utility systems<sup>23</sup> are essential to the proper operation of the environment of care and significantly contribute to effective, safe, and reliable provision of care to patients in health care organizations. It is important that health care organizations establish and maintain a utility systems management program to promote a safe, controlled, and comfortable environment that does the following:

- Ensures operational reliability of utility systems
- Reduces the potential for organization-acquired illness to be transmitted through the utility systems
- Assesses the reliability and minimizes potential risks of utility system failures

#### **Elements of Performance for EC.7.10**

**Note:** *Elements of performance 1 through 6 do not apply to ambulatory care.*

7. The organization develops and maintains a written management plan describing the processes it implements to manage the effective, safe, and reliable operation utility systems.

8. The organization designs and installs utility systems that meet the patient care and operational

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<sup>23</sup> **utility systems** May include electrical distribution; emergency power; vertical and horizontal transport; heating, ventilating, and air conditioning; plumbing, boiler, and steam; piped gases; vacuum systems; or communication systems including data-exchange systems

needs of the services in the organization's buildings.

9. The organization establishes and uses risk criteria<sup>24</sup> for identifying, evaluating, and creating an inventory of operating components of systems to be included in the utility management plan before the equipment is used. These criteria address the following:

- Life support
- Infection control
- Support of the environment
- Equipment support
- Communication

10. The organization develops appropriate strategies for all utility systems equipment on the inventory for ensuring effective, safe, and reliable operation of all equipment in the inventory.<sup>25</sup>

11. The organization defines intervals for inspecting, testing, and maintaining appropriate utility systems equipment on the inventory (that is, those pieces of equipment on the inventory benefiting from scheduled activities to minimize the clinical and physical risks) that are based upon criteria such as manufacturers' recommendations, risk levels, and current organization experience.

12. The organization identifies and implements emergency procedures for responding to utility system disruptions or failures that address the following:

- What to do if utility systems malfunction
- Identification of an alternative source of organization defined essential utilities
- Shutting off of the malfunctioning systems and notifying staff in affected areas
- How and when to perform emergency clinical interventions when utility systems fail
- Obtaining repair services

13. The organization maps the distribution of utility systems and labeling controls for a partial or complete emergency shutdown.

14. The organization identifies and implements processes to minimize pathogenic biological agents in cooling towers, domestic hot/cold water systems, and other aerosolizing water systems.

15. The organization designs, installs, and maintains ventilation equipment to provide appropriate pressure relationships, air-exchange rates, and filtration efficiencies for ventilation systems serving

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<sup>24</sup> The organization may choose not to use risk criteria to limit the types of utility systems to be included in the utility management plan, but rather include all utility systems.

<sup>25</sup> Organizations may use different strategies as appropriate. For example, strategies such as predictive maintenance, interval-based inspections, corrective maintenance, or metered maintenance may be selected to ensure reliable performance.

areas specially designed<sup>26</sup> to control air-borne contaminants (such as biological agents, gases, fumes, and dust).

### **Standard EC.7.20**

The organization provides an emergency electrical power source.

### **Rationale for EC.7.20**

The organization properly installs an emergency power source that is adequately sized, designed, and fueled, as required by the *LSC* occupancy requirements and the services provided.

### **Elements of Performance for EC.7.20**

The organization provides a reliable emergency power system, as required by the *LSC* occupancy requirements, that supplies electricity to the following areas when normal electricity is interrupted:

1. Alarm systems
2. Exit-route illumination
3. Emergency communication systems
4. Illumination of exit signs

### **Additional Elements of Performance for EC.7.20**

The organization provides a reliable emergency power system, as required by the services provided and patients served, that supplies electricity to the following areas when normal electricity is interrupted:

5. Blood, bone, and tissue storage units
6. Not applicable
7. Emergency/urgent care areas
8. Elevators (at least one for nonambulatory patients)
9. Medical air compressors
10. Medical and surgical vacuum systems
11. Areas where electrically powered life-support equipment is used

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<sup>26</sup> **areas specially designed** Include spaces such as operating rooms, special procedure rooms, delivery rooms for patients diagnosed or suspected of having airborne communicable diseases (for example, pulmonary or laryngeal tuberculosis), patients in "protective environment" rooms (for example, those receiving bone marrow transplants), laboratories, pharmacies, and sterile supply rooms.

12. Not applicable
13. Not applicable
14. Operating rooms
15. Postoperative recovery rooms

**Standard EC.7.30**

The organization maintains, tests, and inspects its utility systems.

***Note:** Organizations that offer care, treatment, or services in leased facilities need to communicate maintenance expectations for building equipment not under their control to their landlord through contractual language, lease agreements, memos, and so forth. These organizations are not required to possess maintenance documentation, but must only have access to such documentation as needed and during survey. It is also important that the landlord communicate to the organization any building equipment problems identified that could negatively affect the safety or health of patients, staff, and other people coming to the organization, as well as the landlord's plan to resolve such issues.*

**Elements of Performance for EC.7.30**

1. The organization maintains documentation of a current, accurate, and separate inventory of utility components identified in the utility management plan.
2. The organization maintains documentation of performance and safety testing of each critical component identified in the plan before initial use.
3. The organization maintains documentation of maintenance of critical components of life support utility systems/equipment consistent with maintenance strategies identified in the utility management plan (see standard EC.7.10).
4. The organization maintains documentation of maintenance of critical components of infection control utility systems/equipment for high-risk patients consistent with maintenance strategies identified in the utility management plan (see standard EC.7.10).
5. The organization maintains documentation of maintenance of critical components of non-life support utility systems/equipment on the inventory consistent with maintenance strategies identified

in the utility management plan (see standard EC.7.10).

#### **Standard EC.7.40**

The organization maintains, tests, and inspects its emergency power systems.

**Note:** *This standard does not require organizations to have the types of emergency power systems discussed below. However, if an organization has these types of systems, then the following maintenance, testing, and inspection requirements apply.*

#### **Elements of Performance for EC.7.40**

1. The organization tests each generator 12 times a year with testing intervals not less than 20 days and not more than 40 days apart. These tests shall be conducted for at least 30 continuous minutes under a dynamic load that is at least 30% of the nameplate rating of the generator.

**Note:** *Organizations may choose to test to less than 30% of the emergency generator's nameplate. However, these organizations shall (in addition to performing a test for 30 continuous minutes under operating temperature at the intervals described above) revise their existing documented management plan to conform to current NFPA 99 and NFPA 110 testing and maintenance activities. These activities shall include inspection procedures for assessing the prime movers' exhaust gas temperature against the minimum temperature recommended by the manufacturer.*

*If diesel-powered generators do not meet the minimum exhaust gas temperatures as determined during these tests, they shall be exercised for 30 continuous minutes at the intervals described above with available Emergency Power Supply Systems (EPSS) load, and exercised annually with supplemental loads of*

- *25% of name plate rating for 30 minutes, followed by*
- *50% of name plate rating for 30 minutes, followed by*
- *75% of name plate rating for 60 minutes for a total of two continuous hours.*

2. The organization tests all automatic transfer switches 12 times a year with testing intervals not less than 20 days and not more than 40 days apart.

3. The organization tests all battery-powered lights required for egress. Testing includes the following:

- (a) A functional test at 30-day intervals for a minimum of 30 seconds
- (b) An annual test for a duration of 1.5 hours

4. The organization tests Stored Emergency Power Supply Systems (SEPSS) whose malfunction may severely jeopardize the occupants' life and safety.<sup>27</sup> Testing includes the following:

- (a) A quarterly functional test for 5 minutes or as specified for its class,<sup>28</sup> whichever is less
- (b) An annual test at full load for 60% of the full duration of its class

### **Standard EC.7.50**

The organization maintains, tests, and inspects its medical gas and vacuum systems.

**Note:** *This standard does not require organizations to have the medical gas and vacuum systems discussed below. However, if an organization has these types of systems, then the following maintenance, testing, and inspection requirements apply.*

### **Elements of Performance for EC.7.50**

1. The organization 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.
2. The organization tests piped medical gas and vacuum systems when the systems are installed, modified, or repaired including cross-connection testing, piping purity testing, and pressure testing.
3. The organization maintains the main supply valve and area shut-off valves of piped medical gas and vacuum systems to be accessible and clearly labeled.

### **Standard EC.8.10**

The organization establishes and maintains an appropriate environment.

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<sup>27</sup> **Stored Emergency Power Supply Systems (SEPSS)** Are intended to automatically supply illumination or power to critical areas and equipment essential for safety to human life. Included are systems that supply emergency power for such functions as illumination for safe exiting, ventilation where it is essential to maintain life, fire detection and alarm systems, public safety communications systems, and processes where the current interruption would produce serious life safety or health hazards to patients, the public, or staff. Other non-SEPSS battery back-up emergency power systems that an organization has determined to be critical for operations during a power failure (for example, laboratory equipment, electronic medical records) should be properly tested and maintained in accordance with manufacturer's recommendations.

<sup>28</sup> **class** Defines the minimum time for which the SEPSS is designed to operate at its rated load without being recharged (for additional guidance, see NFPA 111 (1996 edition) *Standard on Stored Electrical Energy Emergency and Standby Power Systems*).

### **Elements of Performance for EC.8.10**

1. Interior spaces should be appropriate to the care, treatment, and services provided and the needs of the patients related to age and other characteristics.
2. Not applicable
3. Not applicable
4. Areas used by the patient are safe, clean, functional, and comfortable.
5. Lighting is suitable for care, treatment, or services and the specific activities being conducted.
6. Not applicable
7. Ventilation provides for acceptable levels of temperature and humidity and eliminates odors.
  7. Not applicable
  8. Not applicable
  9. Not applicable
11. Door locks and other structural restraints used are consistent with patient needs, program policy, law, and regulation. Emergency access provision is provided to all locked occupied spaces.
12. Not applicable
13. **For Medicare-certified ambulatory surgery centers only:** Separate waiting and postanesthesia recovery areas are provided.

**Standard EC.8.20 does not apply to ambulatory care.**

### **Standard EC.8.30**

The organization manages the design and building of the environment when it is renovated, altered, or newly created (*see also* EC.5.50).

### **Elements of Performance for EC.8.30**

1. When planning for the size, configuration, and equipping of the space of renovated, altered, or new construction, the organization uses one of the following:
  - Applicable state rules and regulations
  - Guidelines for Design and Construction of Hospitals and Health Care Facilities, 2001 edition, published by the American Institute of Architects
  - or
  - Standards or guidelines that provide equivalent design criteria

2. When planning demolition, construction, or renovation, the organization conducts a proactive risk assessment using risk criteria to identify hazards that could potentially compromise care, treatment, or services in occupied areas of the organization's buildings. The scope and nature of the activities should determine the extent of risk assessment.

3. When planning demolition, construction, or renovation, the organization uses risk criteria that address the impact of demolition, renovation, or new construction on air quality requirements, infection control, utility requirements, noise, vibration, and emergency procedures.

4. When planning demolition, construction, or renovation, the organization selects and implements proper controls, as required, to reduce risk and minimize impact of these activities.

## **Measuring and Improving Activities**

### **Standard EC.9.10**

The organization monitors conditions in the environment of care.

### **Elements of Performance for EC.9.10**

1. The organization establishes and implements process(es) for reporting the following:<sup>29</sup>
  - Injuries to patients or others coming to the organization's facilities as well as incidents of property damage
  - Occupational illnesses and injuries to staff
  - Security incidents involving patients, staff, or others coming to the organization's facilities or property
  - Hazardous materials and waste spills, exposures, and other related incidents
  - Fire-safety management problems, deficiencies, and failures
  - Equipment-management problems, failures, and user errors
  - Utility systems management problems, failures, or user errors
2. The organization's leaders assign a person(s) (hereafter referred to as the "assigned person[s]") to monitor and respond to conditions in the organization's environment. The assigned person(s)

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<sup>29</sup> Organizations have the flexibility to develop a single reporting method that addresses one or more of the items listed.

performs the following tasks:

- Coordinates the ongoing, organizationwide collection of information about deficiencies and opportunities for improvement in the environment of care
- Coordinates the ongoing collection and dissemination of other sources of information, such as published hazard notices or recall reports
- Coordinates the preparation of summaries of deficiencies, problems, failures, and user errors related to managing the environment of care<sup>30</sup>
- Coordinates the preparation of summaries on findings, recommendations, actions taken, and results of performance improvement activities
- Participates in hazard surveillance and incident reporting
- Participates in developing safety policies and procedures

3. The organization establishes and implements a process(es) for ongoing monitoring of actual or potential risk(s) in each of the environment of care management plans.<sup>31</sup>

4. Each of the environment of care management plans are evaluated at least annually.

5. The objectives, scope, performance, and effectiveness of each of the environment of care management plans are evaluated at least annually.

6. Not applicable

7. Not applicable

8. Not applicable

9. Environmental safety monitoring and response activities are integrated into the patient safety program required in the “Leadership” chapter of this manual.

### **Standard EC.9.20**

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30 Incidents involving patients may be reported to appropriate staff such as staff in quality assessment, improvement, or other functions. However, at least a summary of incidents is shared with the person designated to coordinate safety management activities. Review of incident reports often requires that various legal processes be followed to preserve confidentiality. Opportunities to improve care, treatment, or services or to prevent future similar incidents are not lost as a result of the legal process followed.

31 The environment of care plans are for managing safety, security, hazardous materials and waste, emergency management, fire safety, medical equipment, and utilities.

The organization analyzes identified environment of care issues and develops recommendations for resolving them.

### **Elements of Performance for EC.9.20**

1. The organization establishes and follows a multidisciplinary process for resolving environment of care issues that involves representatives from clinical, administrative, and support services, when applicable.
2. Not applicable
3. The organization analyzes environment of care issues in a timely manner.
4. Recommendations are developed and approved as appropriate.
5. Appropriate staff establishes measurement guidelines.
6. Environment of care issues are communicated to the organization's leaders and person(s) responsible for performance improvement activities.
7. Not applicable
8. A recommendation for one or more performance improvement activities is communicated at least annually to the organization's leaders based on the ongoing performance monitoring of the environment of care management plans.
9. Environmental safety issues are communicated, when appropriate, to those responsible for managing the patient safety program required in the "Leadership" chapter of this manual.

### **Standard EC.9.30**

The organization improves the environment of care.

### **Elements of Performance for EC.9.30**

1. Appropriate staff participates in implementing recommendations.
2. Appropriate staff monitors the effectiveness of the recommendation's implementation.
3. Measurement results are reported through appropriate channels, including the organization's leaders.
4. Not applicable

5. Results of measurement are reported (when appropriate) to those responsible for managing the patient safety program required in the “Leadership” chapter of this manual.

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