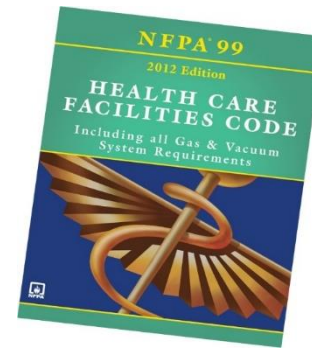
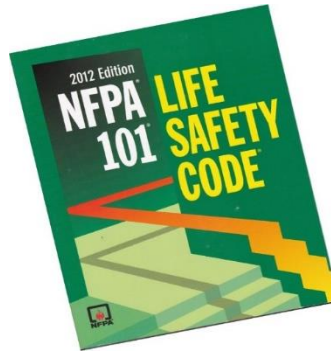


2012 NFPA Life Safety Code 2012 NFPA 99 The “Paradigm Shift” in Code Enforcement



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Mobile Devices

- Please turn off audible ringers as a courtesy to other participants.



Thank you.

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Disclosure Statement

- The following staff and speaker has disclosed that neither he nor his spouse/partner have any financial arrangements or affiliations with corporate organizations that either provide educational grants to this program or may be referenced in this activity:
 - Vincent Avenatti
- Furthermore, each of the previously named speaker has also attested that their discussions will not include any unapproved or off-label use of products.

Program Objectives

Upon completion of this program, participants will be able to:

1. Understand the paradigm shift
2. Learn to use risk based methodology
3. Understanding CMS perspective on occupancy classifications
4. The domino effect between codes
5. Identify hazard vulnerability assessment (HVA) components
6. Indoor air quality requirements from CMS perspective

The Paradigm Shift

- The 2012 version of NFPA 99 has placed the mechanicals in patient care locations, the actual usage of space for patient care in a “risk based” methodology paradigm
- Can you explain the actual categories for the paradigm and how the 2012 NFPA 101 ties the two NFPA standards together?
- Emergency Preparedness Final Rule is part of the paradigm, can you explain the similarities?
- The Domino effect

The Paradigm Shift Continued

- 2012 NFPA 99 uses **Risk-Based Methodology** by assessment of the treatments and services being provided rather than the type of facility in which they are being performed
- **Building Systems “Categories”** are determined when using a Risk-Based Methodology
- NFPA 99 Chapter 4, 2012 Edition describes Fundamentals of a Risk-Based Methodology
- **CMS Transmittal 176 “assessment of ligature risks to patients”**.

Care In A Safe Setting

§482.13(c)(2) - The patient has the right to receive care in a safe setting.

- **Interpretive Guidelines §482.13(c)(2):** Respect, dignity and comfort would *also* be components of an emotionally safe environment. *In order to provide care in a safe setting, hospitals must identify patients at risk for intentional harm to self or others, identify environmental safety risks for such patients, and provide education and training for staff and volunteers.*

Patient Care Areas Of Risk NFPA 99

- There are four Categories used in the risk assessment for building systems failures of Patient care areas, chapter 4:
 - Category 1: Facility Systems failure is **likely to cause Major** injury or death of patients and care givers
 - Category 2: Facility Systems failure is **likely to cause Minor** injury not death of patients and care givers

Patient Care Areas Of Risk Continued

- There are four Categories used in the risk assessment methodology: (continued)
 - Category 3: Facility Systems failure is **not likely to cause injury** to patients and care givers but **may cause patient discomfort**
 - Category 4: Facility Systems failure has **no impact on patient care**

NFPA 99 Key Definitions

- Patient Care Vicinity: **A space within a location intended for examination and treatment of patients, extending (6ft) beyond the normal location of the bed, chair, table, treadmill or other device that supports the patient during examination and treatment and extending (7ft-6 inches) above the floor**

NFPA 99 Definitions Continued

- Patient Care Room: **Any room of a health care facility where the patients are intended to be examined or treated**
- Patient Care Related Electrical Equipment: **Electrical equipment appliance that is intended to be used for Diagnostic, Therapeutic, or Monitoring purposes in a patient care vicinity**

NFPA 99 Definitions Continued

- **Critical Care Room: Room in which failure of equipment or system is likely to cause major injury or death to patients or caregivers (Category 1)**
- **General Care Room: Room in which failure of equipment or system is likely to cause minor injury to patients or caregivers (Category 2)**

NFPA 99 Definitions Continued

- **Basic Care Room: Room in which failure of equipment or system is not likely to cause injury to patients or caregivers (Category 3)**
- **Support Room: Room in which failure of equipment or system is not likely to have physical impact to patients or caregivers (Category 4)**

Mechanical Risk Categories NFPA 99

- **There are three Categories** used in risk assessment methodology for Medical Gas Piped Systems and Essential Electrical Systems

Medical Gas Piped Systems

- Medical gas, medical air, surgical vacuum, WAGD, and air supply systems in which failure is likely to cause major or death are designated:
 - Category 1. **Systems in which failure is likely to cause major injury to patients are designated**
 - Category 2. **Systems in which failure is likely to cause minor injury, but can cause discomfort is designated**

Medical Gas Continued

- Category 3. **Deep sedation and general anesthesia are not administered when using a category 3 medical gas system**



Essential Electrical Systems

- Different categories of patient care rooms require different requirements for circuits, receptacles, power strips and other electrical requirements. Electrical/Essential Systems are categorized by patient care areas:
 - Category 1 Critical Care Rooms - **Electrical system failure is likely to cause major injury or death of patients, including all rooms where electric life support equipment is required**

Essential Electrical Systems Continued

- Category 2 General Care Rooms – **Electrical system failure is likely to cause minor injury to patients**
- Category 3 Basic Care Rooms – **Electrical system failure is not likely to cause injury to patients. Type 3 life safety branch has an alternate source of power that will be effective 1 ½ hours**

Risk Assessment Methodology

- NFPA 99, 2012 Edition section 4.2 requires Health Care and Ambulatory occupancy define its Risk Assessment Methodology, implement the methodology and document the results
- *“CMS will confirm when on site that the facilities are using Risk-Based Methodology when conducting surveys”*

Two Types of Risk Assessments

- In **Quantitative** risk analysis, an attempt is made to numerically determine the probabilities of various adverse events and the likely extent of the losses if a particular event takes place.
- **Qualitative** risk analysis, which is used more often, does not involve numerical probabilities or predictions of loss. Instead, the qualitative method involves defining the various threats, determining the extent of vulnerabilities and devising countermeasures should an attack occur.

2012 NFPA 99 (Part II of CMS Survey Form)

- Some major changes in the Health Care code:
 - 1) Definitions to patient related areas
 - 2) Risk Based Methodology chapters 4,5 and 6
 - 3) Referenced standards
- CMS survey form CMS form CMS – 2786R (07/2018), and form CMS – 2786U (07/2018), New K-tags!
- New E-tags and Appendix Z

New K-tags Part II Survey Process

- Here are some of the most commonly cited new K-tags (900's) for NFPA 99 Part II of the survey process:
 - **K-901** Fundamentals (Building system Categories of risk by patient care areas)
 - **K-903** Medical Gases (Categories of risk to patient care)

New K-tags Part II Continued

- **K-915** Electrical Systems (**Categories of risk to patient care**)
- **K-911** Gas and Vacuum systems information and warning labeling (**Manifold Systems**)
- **K-918** Essential Electric System breakers (main & feeder) exercised annually and **circuit information marked and ready identifiable**

New K-tags Part II Continued

- **K-920** Power Cords and Extension Cords – Patient-Care-Related Electrical Equipment (PCREE)
- **K-921** Maintenance protocols for PCREE and personnel responsible for testing equipment continued training
- **K-923** section 11.6.5.2.1, When a facility employs ***cylinders with integral pressure gauge, a threshold pressure considered empty is established***

New K-tags Part II Continued

- **K-926** section 11.5.2.1 **Gas equipment training and qualifications**, facility provides continuing education and safety guidelines with usage requirements for personnel with application, maintenance and handling of medical gases and cylinders.
- **K-928** section 11.5.3.1.6, **Labeling Cylinders**, color coding is not utilized as primary method of determining cylinder or container contents

New K-tags Part II Continued

- **K-933** section 15.13, **Fire Prevention In Operating Rooms, Procedures are established for operating room emergencies** including alarm activation, evacuation, equipment shut down, and control operations. Emergency include the control of chemical spills, extinguishment of drapery, clothing and equipment fires. Training is provided to new OR personnel (**including Surgeons**), continuing education is provided, incidents reviewed monthly, procedures **reviewed annually**

CMS Occupancy Requirements

- There are four **key elements** for the way CMS defines an occupancy. Counting patients being served is **NOT** one of them.
- The life safety code NFPA 101 often refers to the number of patients like four or more when defining occupancy, CMS does not, one or more is the CMS requirement for count
- Who owns the building does not matter.
- **Mixed occupancy** is separated fire rated construction

Key Elements

- Other “Key Elements” to how CMS defines occupancies and construction
 - Existing from New construction
 - Renovation vs. Modification construction projects
 - Change in use of space
 - Use of Anesthesia
 - Mostly capable or incapable patients
 - Hours of operations (open to provided treatment or services)
 - sleeping rooms

CMS Occupancies

– Health Care Occupancy Summary:

- Facility provides sleeping accommodations;
- Facility provides medical treatment 24 hrs.
- Patients are mostly incapable of self-preservation.

“You will find occupancy information on CMS occupancy classifications in the electronic resources under CMS S&C letter 11-05-LSC”

CMS Occupancies Continued

- **Ambulatory Occupancy Summary:**
 - Facility **does not provide sleeping accommodations**
 - Facility **does not provide medical services 24-hrs.**
 - Facility provides anesthesia services
 - Patients are mostly incapable of self-preservation

CMS Occupancies Continued

- **Business Occupancy Summary:**
 - Facility **does not provide sleeping accommodations**
 - Facility **does not provide medical services 24 hrs**
 - Facility **does not provide anesthesia**
 - Patients are **mostly capable of self-preservation**

CMS/LSC Separation Requirements

- Health Care Occupancy requires a **two-hour fire separation** (Horizontal exit) in order to change survey requirements
- Ambulatory requires a **one-hour fire separation** from other building occupancies in a business building, or all portions would be considered Ambulatory
- Business occupancy, no requirements

CMS Emphasized Major Points

- With the ability to use FSES, Waivers, and State Fire and Safety Codes as alternatives and equivalencies these **flexibilities mitigate the potential for unnecessary burdens for applying the LSC**
- CMS emphasizes that the Life Safety Code (LSC) is **not** an accessibility code
- Modify the requirements specific to ABHRs by retaining the requirement “**protection against inappropriate access**”

CMS Major Points Continued

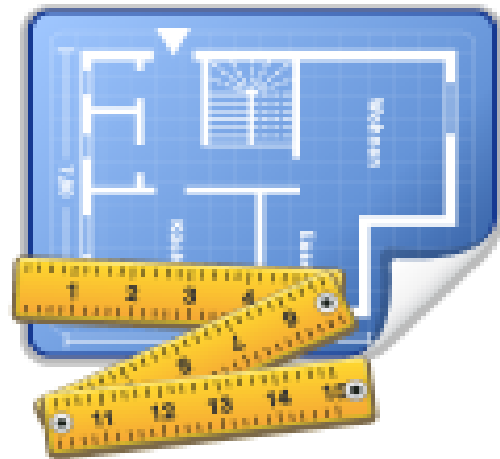
- State and local government programs and services including **health care facilities are required to comply with Title II of the Americans with Disabilities Act (ADA)**
- Private entities that operate public accommodations such as **nursing homes, hospitals and social service centers are required to comply with Title III of the Americans with Disabilities Act (ADA)**

CMS Major Points Continued

- Although the LSC allowed for up to a 6 inch protrusion from wall mounted items the 2010 ADA construction standard guide (sections 204.1 and 307) **limits wall protrusions from items mounted above 27 inches and no more than 80 inches above the finish floor to 4 inch protrusions except for a handrail which may protrude up to 4½ inches**
- **ICC/ANSI A117.1** American National Standard for Accessible and Usable Buildings and Facilities

Building Rehabilitation NFPA 101

- Chapter 43 for Rehabilitation work to buildings
- Defines construction work in all Occupancy classifications
- Defines Rehabilitation work in Existing buildings by six categories
- New K-tag (K-111)



Chapter 43 Rehabilitation Categories

- Six Building Rehabilitation Categories:
 1. Repair
 2. Renovation
 3. **Modification**
 4. Reconstruction
 5. Change of Use or Occupancy classification
 6. Addition

Chapter 43 Definitions

- **Repair:** Patching, restoration or painting of materials for the purpose of maintaining materials in good condition
- **Renovation:** The replacement in kind, strengthening or upgrading of building materials that **does not** result in reconfiguration of a building space

Chapter 43 Definitions Continued

- **Modification:** The reconfiguration of any space, or elimination of any door or window, addition or elimination of load bearing elements, reconfiguration of an existing system or new additional equipment

Chapter 43 Definitions Continued

- **Reconstruction:** The reconfiguration of a space that affects an exit or a corridor shared by more than one occupant space. Or a rehabilitation work area that is not permitted to be occupied do to egress, fire safety or their equivalent is not in place or continuously maintained
- **Change of Use or Occupancy:** A change in the purpose, level of activity or occupancy classification of a structure or portion of the structure

Chapter 43 Definitions Continued

- **Addition:** An increase to a building area, aggregate floor area, building height, or number of stories to a structure
- **Equipment or Fixture:** Any plumbing, heating, electrical, ventilating, air-conditioning, refrigerating, fire protection equipment, elevators, dumb waiters, escalators, boilers, pressure vessels or other mechanical facilities related to building services

Questions



*Break Time
back in
30 minutes*



Hazard Vulnerability Assessment (HVA)

- **Risk Assessment:** The term risk assessment describes a process facilities use to assess and document potential hazards that are likely to impact their geographical region, community, facility and patient population and identify gaps and challenges that should be considered and addressed in developing the emergency preparedness program. The term risk assessment is meant to be comprehensive, and may include a variety of methods to assess and document potential hazards and their impacts. *The healthcare industry has also referred to risk assessments as a Hazard Vulnerability Assessments or Analysis (HVA) as a type of risk assessment commonly used in the healthcare industry.*

HVA Continued

- **Emergency Management Community:** An effective HVA requires a close partnership with the local emergency management community. Risk assessment teams should consider enlisting the assistance of local emergency responders
 - Emergency responders (emergency medical services, fire, and law enforcement);
 - Local and state emergency management agency representatives;
 - Public health officials;
 - Public utility officials;
 - Regional Federal Emergency Management Agency (FEMA) representatives; and Transportation authorities.

The Comprehensive Approach

- A comprehensive approach to meeting the health and safety needs of a patient population should encompass the elements for emergency preparedness planning based on the “all hazards” definition and specific to the location of the facility.
- The term “comprehensive” in this requirement is to ensure that facilities do not only choose one potential emergency that may occur in their area, but rather consider a multitude of events and be able to demonstrate that they have considered this during their development of the emergency preparedness plan.

Comprehensive Approach Continued

HVA: Based on a **risk assessment, develop an emergency plan using an “all-hazards” approach** focusing on capacities and capabilities that are critical to preparedness for a full spectrum of emergencies or disasters specific to the location of a provider or supplier (**Annually**)

- Documented facility/community based risk assessment
- Include strategies for emergency events identified
- Address patient population, type of services, continuity of operations
- Process for collaboration with local officials
- The probability of an incident occurring is important to establishing risk.
- potential consequences of a hazard, which assets might be impacted.

National Recognized Standard

– §482.42 Condition of Participation: Infection Control

The hospital's program for prevention, control and investigation of infections and communicable diseases should be conducted in accordance with ***nationally recognized infection control practices or guidelines, as well as applicable regulations of other federal or state agencies.***

National Recognized Standard Cont.

Examples of Nationally Recognized standards:

- Centers for Disease Control and Prevention (CDC)
- Association for Professionals in Infection Control and Epidemiology (APIC)
- Society for Healthcare Epidemiology of America (SHEA)
- Association of Peri-Operative Registered Nurses (AORN)
- State and local codes

National Recognized Standard Cont.

§482.42 (b), (1)

- The hospital's infection prevention and control program must be integrated into its hospital-wide Quality Assurance and Performance Improvement (QAPI) program.

Indoor air Quality

- Facilities pressure relationships start with the National standard for Infection Control and room designations.
- It is important to note that the room designations in the national standard be considered **unchangeable**.
- Room designations in the hospital (signage) may be **inappropriate** based on mechanical limitations.

Nursing	Air movement relationship to adjacent area 2	Minimum air changes of outdoor air per hour 3	Minimum total air changes per hour 4, 5	All air exhausted directly to outdoors 6	Recirculated by means of room units 7	Relative humidity 8 %	Design temperature 9 (F°/C°)
Patient room 16	—	2	6	—	—	—	70-75/21-24
Toilet room	In	—	10	Yes	—	—	—
Newborn nursery suite	—	2	6	—	No	30-60	72-78/22-26
Protective environment room 11, 17	Out	2	12	—	No	—	75/24
Airborne infection isolation room 11, 18	In	2	12	Yes 15	No	—	75/24
Isolation alcove or anteroom 17, 18	In / Out	—	10	Yes	No	—	—
Labor/delivery/recovery 16	—	2	6	—	—	—	70-75/21-24
Labor/delivery/recovery/postpartum 16	—	2	6	—	—	—	70-75/21-24
Patient corridor	—	—	2	—	—	—	—

Sterilizing & Supply							
ETO-sterilizer room	In	—	10	Yes	No	30-60	75/24
Sterilizer equipment room	In	—	10	Yes	—	—	—
Central medical & surgical supply							
Soiled or decontamination room	In	—	6	Yes	No		68-73/20-23
Clean workroom	Out	—	4	—	No	30-60	75/24
Sterile storage	Out	—	4	—	—	70 (max)	—

Key Component -Testing Requirements

National recognized standards for Infection Control give testing requirements:

- When pressure rooms are in use
- When pressure rooms are not in use
- “Flutter” testing air flow
- Construction activity within the hospital

Key Component – Monitoring Equipment

Facility monitoring equipment should meet the requirements of the *national standard for Infection Control room designations*:

- Air flow
- Relative Humidity
- Temperature
- Number of air exchanges
- Exhaust and Recirculation

Questions



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