The FGI Guidelines 2014 Revisions With 2018 Highlights

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The FGI Guidelines for the Design and Construction of Health Care Facilities

The views and opinions expressed in this presentation are the opinion of the speaker and not the official position of the Healthcare Guidelines Revision Committee (HGRC).

A Brief History of the Development of the Guidelines

1947 General Standards published in Federal Register as part of regulations required by the Hill-Burton Act. Not revised on a regular basis and with no public input.

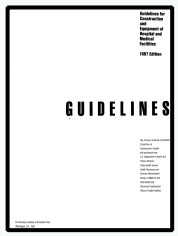
1974 Renamed *Minimum Requirements for Construction and Equipment for Hospital and Medical Facilities* to indicate "minimum standards" rather than best practice. First public input was requested but still revised by federal employees.

1983-84 Removed from Regulation and renamed *Guidelines for Construction and Equipment of Hospital and Medical Facilities*. Still used by many AHJs and organizations, it retained some regulatory language.

Note: This was the last edition revised and published by the federal government.

A Brief History of the Development of the Guidelines

1987



Because President Reagan terminated the US publication after the1984 edition, an agreement was reached to publish one more edition with AIA/AAH support. Committee included 52 members.

1992-93

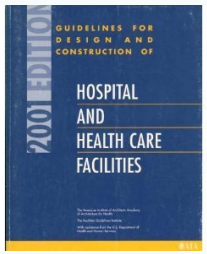
After this, revision of the Guidelines would have ceased to exist but for the dedication of 3 people, Armund Bergun, Joe Sprague, and Doug Erickson who worked to procure needed funding from DHHS, AHA and AIA. The result was a document from a multidisciplinary group of federal, state, and private content experts.

1996-97

Expanded the committee to 65 people to include AHJs. Received over 2,000 proposals. Name changed to *Guidelines for the Design and Construction of Hospitals and Health Care Facilities* because it included other facilities such as nursing homes.

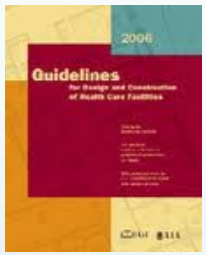
A Brief History of the Development of the Guidelines

2001



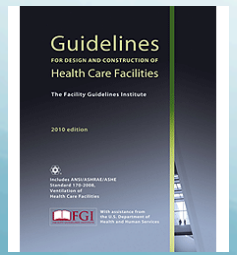
In 1998 the Facility Guidelines Institute (FGI) was founded as a non profit to be sure the Guidelines would continue into the future. Incorporated many revisions from the public. Committee expanded to 103 members with 23 AHJs.

2006



Received funding from DHHS/CMS; AIA provided staff/ technical support. Goal of this edition was to make it more user friendly and to generate more content. Continued the process of expanding the Appendix material. Committee expanded to 124.

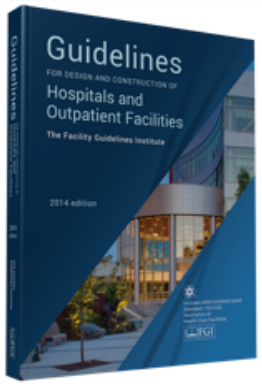
2010

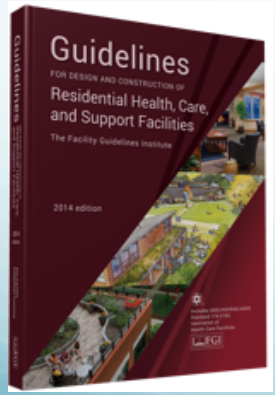


Published and supported by ASHE. Reformatted again, added new chapter for ASHRAE 170, added sections on lighting, noise control, patient handling, and other areas of interest.

A Brief History of the Development of the Guidelines

2014 With the 2014 edition, the FGI Guidelines has expanded into two separate documents that include design and construction elements for a wide spectrum of health care facilities.



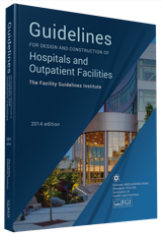


Book 1 is titled, *Guidelines for the Design and Construction of Hospitals and Outpatient Facilities*. This book contains design and construction information for hospitals, outpatient facilities, birth centers, urgent care centers, mobile units, cancer treatment facilities, free standing emergency facilities and dental clinics.

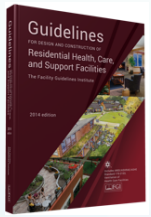
Book 2 is titled *Guidelines for Residential Health, Care, and Support Facilities*. This book contains design and construction information for nursing homes, assisted living facilities, independent living facilities, hospice facilities, adult day care, wellness facilities and outpatient rehabilitation facilities.

2018 Edition of the FGI Guidelines

With the 2018 edition, the FGI Guidelines has expanded into three separate documents that include design and construction elements for Hospitals, Residential Facilities, and Outpatient Facilities



Book 1 is titled, *Guidelines for the Design and Construction of Hospitals*. This book contains design and construction information for hospitals, mobile units,



Book 2 is titled *Guidelines for Residential Health, Care, and Support Facilities*. This book contains design and construction information for nursing homes, assisted living facilities, independent living facilities, hospice facilities, adult day care, wellness facilities and outpatient rehabilitation facilities.

Book 3 is titled *Guidelines for Outpatient Facilities* and contains design and construction information for all outpatient facilities including cancer treatment facilities, dialysis facilities, free standing emergency facilities, urgent care clinics, office surgical facilities, and so forth .

The FGI Guidelines Committee

PHOTO COURTESY OF FGI

The April 2011 gathering of the 2014 Health Guidelines Revision Committee was the first all-hands meeting in the 2014 *Guidelines* revision cycle.

The committee now has over 100 members.
With the Development of the *Guidelines,* standards have been set and best practices have been developed and codified into descriptive language design professionals can apply to new building projects.

FGI Guidelines Boards and Committees

- All HGRC members and sub-committee participants are appointed volunteers
- No monetary compensation for HGRC members, FGI Board members, or sub-committee participants
- All of income goes to “Guidelines” research and development

How the Guidelines Committee was Structured for 2014 Edition

How the *Guidelines* are Written: Performance vs. Prescriptive

Performance based: Standard states goals and objectives to be achieved and describes methods that can be used to demonstrate whether or not products and services meet the specified goals and objectives. (Much of the Residential sections use this method)

Prescriptive standard: Sets minimum requirement that typically prescribes materials, design and construction methods frequently without stating goals and objectives. (This method is preferred by the AHJ for adoption.)

How the Guidelines are Written: Shall versus Should

Main Body: The main body of the text contains prescriptive requirements introduced by the word “shall” and that are able to be adopted by rules or codes and enforced by Authorities having Jurisdiction (AHJs).

Appendix Material: Contains “best practice” information introduced by the word “should” and is not adoptable or enforceable. Has been a place for new standards to slowly come into the Guidelines but now it is a place for additional information regarding a prescriptive requirement

Purpose of the *Guidelines*

To set **Minimum Standards** for Program, Space, & Equipment for new and renovated construction for Hospitals, Nursing Homes, Outpatient, Rehabilitation, Psychiatric, Mobile & other types of health care facilities

Referenced by JCAHO, PHS, IHS, HUD, 242 Hospital Mortgages and over 40 states for Licensure and/ or Accreditation of Health Care Facilities

Standards set forth in the *Guidelines* shall be considered minimum and do not prohibit designing facilities and systems that exceed these requirements where desired by the governing body of the health care facility.

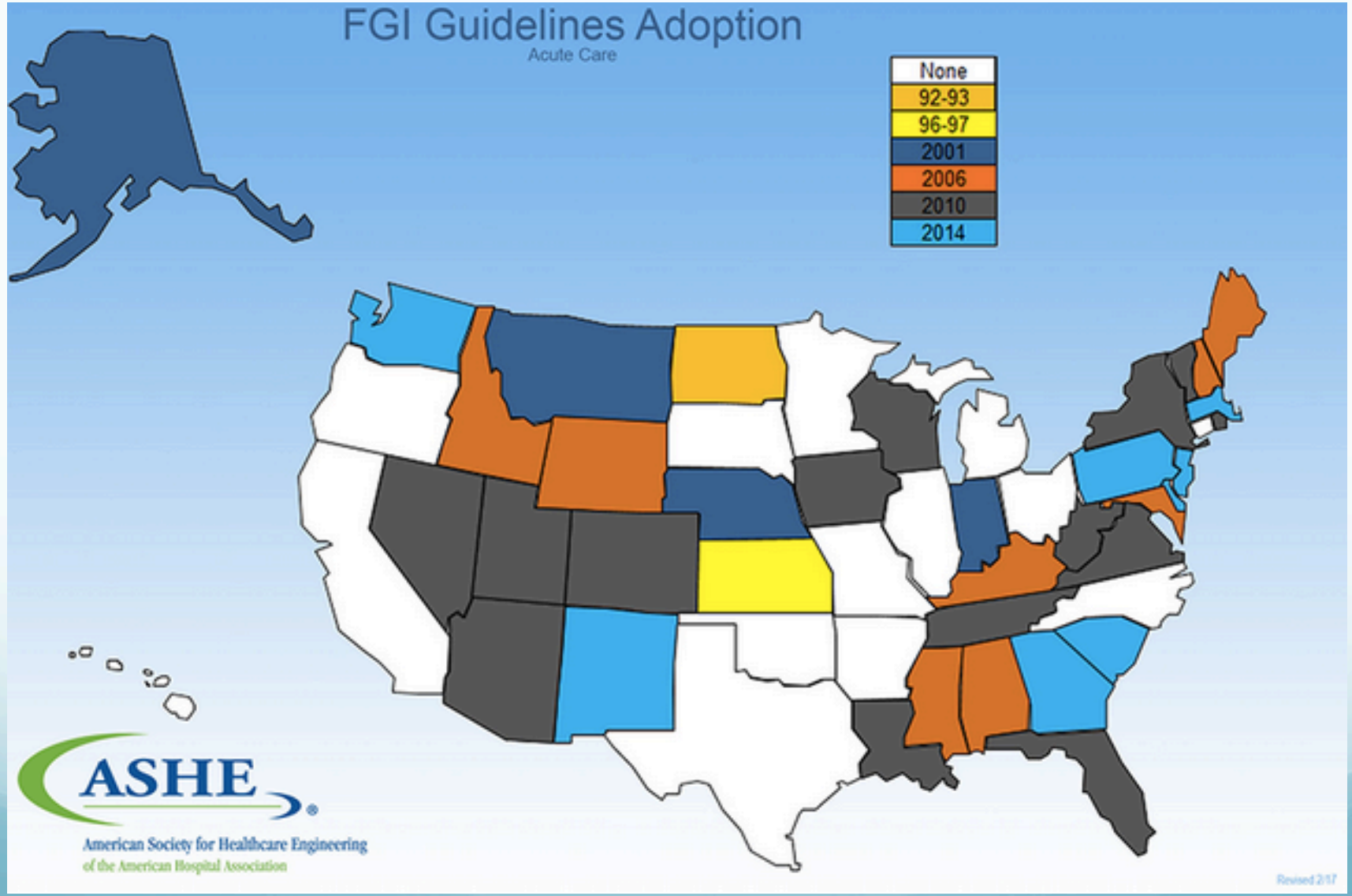
Review of the Revisions to the *Guidelines for the Design and Construction of Hospitals and Outpatient Facilities*

2014 Edition

Adoption of the 2014 Edition

- Because CMS no longer adopts a design standard, (just the LSC) , every state varies in its adoption process.
- Presently about 44 states adopt some year edition and some part or version of the FGI Guidelines (e.g., Florida has adopted the 2014 with additional requirements, while Nevada and Arizona adopt all Parts as requirements… even including the Appendix material.)
- Some states still write their own design standards and use the *Guidelines* only as a model (e.g. California, and Texas)
- Some states adopt the new edition as soon as it is published (e.g. Louisiana and New Mexico)
- Other states must wait for either legislative process or wait for building code cycles (e.g., Florida and Washington)
- Check with your state or local AHJ for a determination of adoption, but remember, the FGI Guidelines are still considered an "Industry Standard"

Adoption of the 2014 Edition



Major Revisions to Book 1: *Guidelines for Design and Construction of Hospitals and Outpatient Facilities*

Part 1 General:

- Continue to revised and regrouped sections into more logical order.
- Added more material to Common Elements chapters
- Safety Risk Assessment (SRA) Combines the ICRA, PHAMA, Patient Fall Prevention, Medication Safety, and etc under one heading

Part 2 Hospitals:

- Requirements for Small Primary Care Hospitals incorporated into Acute & Critical Access Hospitals.
- New Chapters for Free Standing Emergency Departments & Children's Hospital

Major Revisions Book I (Continued)

Part 3 Outpatient Facilities:

- Deleted, relocated and added types of Outpatient Facilities including:
  - Deleted Small Primary Care Facilities
  - Relocated Birth Centers, Mobile Units
  - Added Dental Clinic
  - Retained and revised Office-Based Surgery
  - Left Outpatient Surgical Facilities as Chapter 3.7

Part 4 Ventilation of Health Care Facilities:

- Incorporated the 2013 edition of ASHRAE Standard 170: Ventilation of Health Care Facilities

2014 Organization of Hospitals and Outpatient Facilities

Organized into

Parts, Chapters, Sections, Paragraphs, Sub Paragraphs

- **Introduction, References, and Glossary**
- **Parts:** There are 4 Parts:
  - **Part 1** General (Applies to All Parts)
  - **Part 2** Hospitals Facilities
  - **Part 3** Outpatient Facilities
  - **Part 4** Ventilation of Health Care Facilities (ASHRAE Standard 170-2013)

2014 Organization of Hospitals and Outpatient Facilities

- **Chapters:** Each Part is divided into chapters. The first chapter contains **Common Elements** that appear in two or more Chapters.
- **Part 2 Hospitals:**
  - Chapter 2.1 Common Elements
  - Chapter 2.2 General Hospital
  - Chapter 2.3 Freestanding Emergency Departments
  - Chapter 2.4 Critical Access Hospitals
  - Chapter 2.5 Psychiatric Hospitals
  - Chapter 2.6 Rehabilitative Hospitals
  - Chapter 2.7 Children's Hospital

Major Revisions to Book 2: *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*

- Includes a Part I General specifically revised for residential facilities and their safety risk assessments
- Reorganizes and revises the facility types in Part 4 of the 2010 including nursing homes, assisted living facilities, hospices, and adult day care centers.
- Adds new chapters for independent living facilities, outpatient rehabilitation facilities, and wellness centers.
- Incorporates 2013 edition of ASHRAE Standard 170: Ventilation of Health Care Facilities

2014 Organization of Residential Health, Care, and Support Facilities

Introduction, References, and Glossary

- **Parts:** There are 6 Parts:
  - **Part 1** General (Applies to All Parts)
  - **Part 2** Common Elements (Applies to All Parts)
  - **Part 3** Residential Health Facilities
  - **Part 4** Residential Care and Support Facilities
  - **Part 5** Non-Residential Support Facilities
  - **Part 6** Ventilation of Health Care Facilities (ASHRAE Standard 170-2013)

2014 Organization of Residential Health, Care, and Support Facilities

- **Chapters:** Each Part is divided into chapters. The first chapter contains **Common Elements** that appear in two or more Chapters.

- **Part 3 Residential Health Facilities**

(These are facilities that provide nursing care)

  - Chapter 3.1 Common Elements
  - Chapter 3.2 Nursing Homes
  - Chapter 3.3 Hospice Facilities

2014 Organization of Residential Health, Care, and Support Facilities

- **Part 4 Residential Care and Support Facilities**
  (Facilities that provide personal care or specially designed living environments)
  - Chapter 4.1 Common Elements
  - Chapter 4.2 Assisted Living Facilities
  - Chapter 4.3 Independent Living Settings
- **Part 5 Non-Residential Support Facilitie**s
  (Facilities that do not provide sleeping accommodations)
  - Chapter 5.1 Common Elements
  - Chapter 5.2 Adult Day Care and Adult Health Care Facilities
  - Chapter 5.3 Wellness Centers
  - Chapter 5.4 Outpatient Rehabilitation Therapy Facilities

General Organization *Guide*

- **Paragraphs and subparagraphs:** The details with-in each section. Every different idea is identified with a number.

Over all Outline of the Book is as follows:

- **Part 2** Hospitals
  - **Chapter 2.2** General Hospital
    - **Section 2.2-3** Diagnostic and Treatment
      - **Paragraph 2.2-3.1** Emergency Services
        - **Sub-paragraph 2.2-3.1.1** General
          - **2.2-3.1.1.1** Definitions
            - **(1)** Specifics to that sub paragraph
              - **(a)** Specifics to that idea
                - **(i)** Additional Specifics

General Organization *Guide*

- **Appendix Material**
  - Paragraph always starts with an **"*"**
  - Located in the back of the book
  - Is **not** meant to be part of the enforceable text.

- **How to Use the Guidelines:**
  - Start with the Correct Part and Chapter (Like an Occupancy)
  - First Consult the ***Contents*** pages in the front of the book
  - Do Not Leaf through the book … you will miss requirements
  - Follow all of the references

2014 Glossary Definitions

- **Relative Terms for Location** (To replace "convenient")
  - **In:** Located within the identified area or room
  - **Directly accessible:** Connected to the identified area or room through a doorway, pass-through, or other opening without going through an intervening room or public space
  - **Adjacent:** Located next to but not necessarily connected to the identified area or room
  - **Immediately accessible**: Available either in or adjacent to the identified area or room
  - **Readily accessible:** Available on the same floor as the identified area or room
  - **In the same building:** Available in the same building as the identified area or room, but not necessarily on the same floor

Part 1 General

Part 1 General

Chapter 1.1 Introduction

- Interpretations at www.fgiguidelines.org
- Renovations:
  - Compliance Requirements
  - **Exceptions:**

    A list of exceptions has been added to help clarify when existing systems or building equipment must be updated.
  - Temporary Waivers
  - Affected Areas and Unaffected Areas
  - Undiminished Safety
  - Long-Range Improvements

Part 1 General

Chapter 1.1 Introduction (Continued)

- Equivalency Concepts promoted by the Guidelines
  - Guidelines Revised only every 4 years
  - AHJ may use expert sources
  - Demonstration of Intent is met
  - Industry accepted construction tolerances
  - Must achieve an equivalent level of performance and no other safety element or system is compromised
  - Reality Check…Very few AHJs feel comfortable exercising their authority to say ”Yes”. But many are not hesitant about saying “NO”

Part 1 General

Chapter 1.2- Planning, Design, Construction, Commissioning

- 1.2-2 Functional Program
- 1.2-3 Safety Risk Assessment (SRA)
  - Infection Control Risk (ICRA)
  - Patient Handling and Movement Assessment(PHAMA)
  - Fall Prevention
  - Medication Safety
  - Behavioral and Mental Health Risk
  - Patient Immobility
  - Security Risk

Functional Program

- The functional program is an important part of planning and designing health care and residential facilities.
- Requirements were streamlined by moving some information into the appendix.
- An executive summary of key elements was added.
  - Project Purpose
  - Project Type and Size
  - Construction Type/Occupancy and Building Systems
  - Operational Requirements
  - Architectural Space Requirements

Functional Program

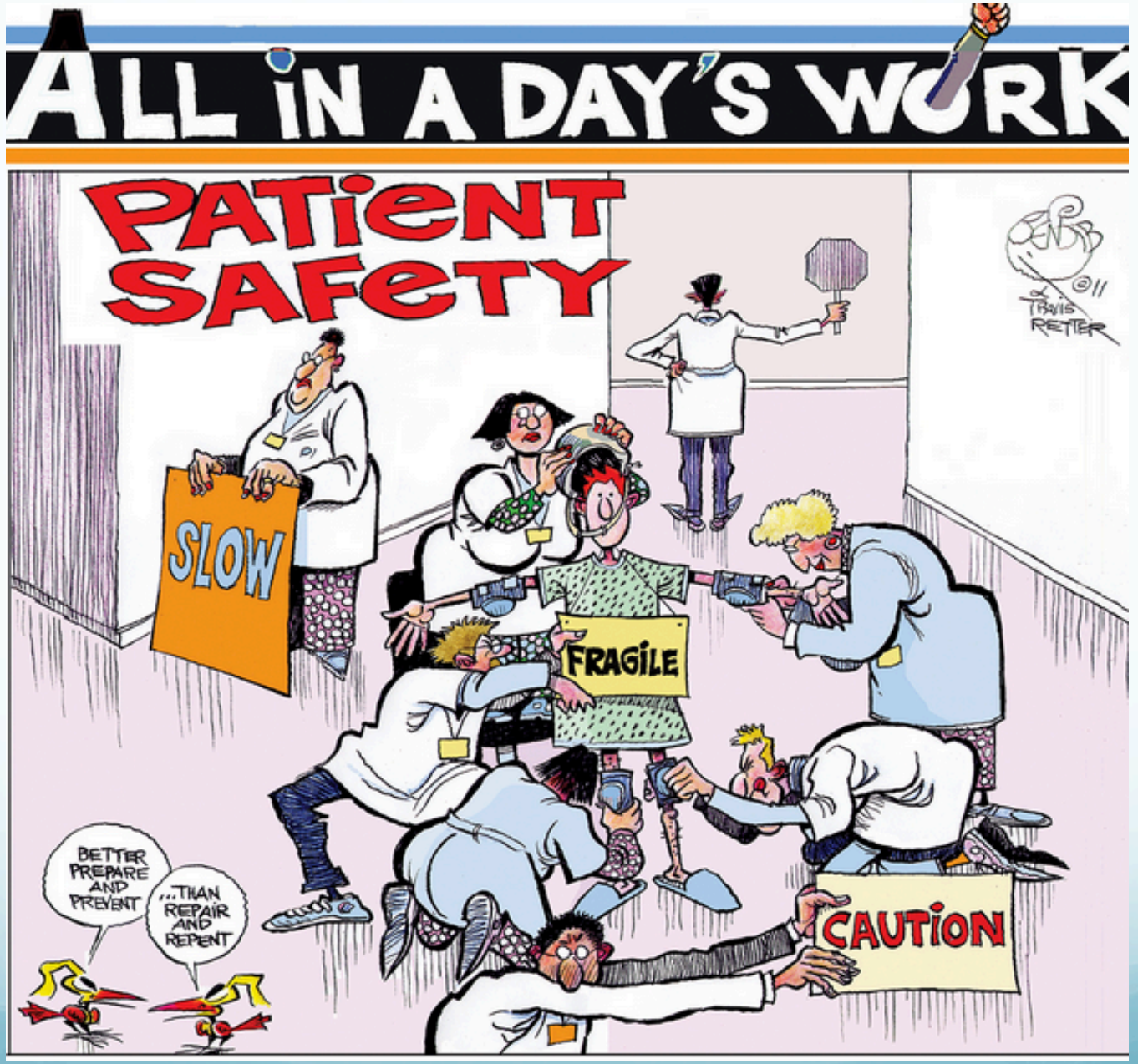
- More than 400 references to the functional program in the body of the text were eliminated, and more appropriate language added.
- It is the owner's responsibility

- The AHJ uses it to identify the types of spaces being proposed for design and their resulting requirements.

- **But it is not to be part of the construction documents and does not have to be signed by the owner.**

- Note: A functional program is not required for equipment change out and minor renovations

2014 Revisions for Patent Safety



What is a Safety Risk Assessment (SRA)?

- It is a risk identification process, intended to identify hazards & risks and mitigate the underlying conditions of the environment that contribute to adverse safety events.

- The goal of the SRA is to integrate all considerations for a safe environment by coordinating conflicting or overlapping recommendations, identify vulnerabilities, identify features that contribute to risk and mitigate or eliminate facility risks.

What is a Safety Risk Assessment (SRA)?

- Some components of the SRA are new to the 2014 Edition
- Other components were in the 2010 Edition and include
  - Infection control Risk Assessment (ICRA)
  - Patient handling and Movement Assessment (PHAMA)
- Must always complete an ICRA for even minor renovation projects.

2014 Safety Risk Assessment (SRA)

The SRA is a multidisciplinary, documented assessment process intended to proactively identify hazards and risks and mitigate underlying conditions of the built environment that can contribute to adverse safety events.

These conditions include:

- Infection Control Risk Assessment (ICRA)
- Patient Handling and Movement Assessment (PHAMA)
- Patient Fall Prevention
- Medication Safety
- Behavioral and Mental Health (Patient Injury and Suicide Prevention)
- Patient Immobility Risk Assessment (PIRA)
- Security Risks

Infection Control Risk Mitigation Recommendations (ICRMR)

- The **owner** shall ensure the requirements are incorporated into the project documents
- The **owner** shall inspect the initial installation and monitor the project throughout its duration
- Infection control risk mitigation recommendations (ICRMRs) shall be prepared by the ICRA team and shall, at minimum, address the following:
  - Standards for barriers and other protective measures required to protect adjacent areas and susceptible patients from airborne contaminants
  - Temporary provisions or phasing for construction or modification of HVAC and water supply systems
  - Protection from demolition

2014 Decorative Water Features

Fountains and other open decorative water features can represent a reservoir for opportunistic human pathogens.

Outdoor Water Features

- Where provided, open water features shall be equipped to safely manage water quality to protect the public from infectious or irritating aerosols

Indoor Water Features

- Installation of indoor, unsealed (open) water features shall not be permitted
- Covered fish tanks shall be permitted in public areas, but not in oncology nursing units
- Decorative plant boxes or containers with live plants, dirt, or dried flowers shall not be built inside or immediately adjacent to an oncology nursing unit

Patient Handling And Movement Assessment (PHAMA)?

What is a Patient Handling And Movement Assessment (PHAMA)?

- It is an assessment by the owner to increase or maintain patient mobility, independent functioning, and strength and to provide a safe environment for patients and staff.
- Phase I: Needs Assessment
- Phase II: Design Considerations (including bariatric design) that may require structural engineering components, space requirements, flooring and interior design considerations, etc.

Part 1 General

Chapter 1.2-4 Environment of Care Requirements

- Delivery of Care Model Concepts
- Patients, Visitors, Physicians, and Staff Accommodation and Flow
- Building Infrastructure and Systems Design Criteria
- Physical Environment Elements
  - Natural Light
  - Views and Access to Nature
  - Wayfinding
  - User Control
  - Privacy and Confidentiality
  - Security
  - Surfaces
  - Cultural Responsiveness

Part 1 General

Chapter 1.2-5 Planning and Design, Considerations

- Acoustic Design
- Sustainable Design
- Wayfinding
- Bariactric Design Considerations
- Provisions for Disasters

Chapter 1.2-6 Renovation

- Phasing
- Noise and Vibration
- Isolation
- Maintenance of Air Quality and Utilities
- Existing Conditions

Part 1 General

Chapter 1.2-7 Commissioning

Requirements were added for developing the owner's project requirements, preparing a commissioning plan, and developing commissioning specifications and construction checklists.

- HVAC
- Automatic Temperature control
- Domestic Hot Water
- Fire Alarm and fire protection systems (integration)
- Essential electrical systems

Part 2 Hospitals

Part 2 Contains the General and Specific Requirements for the following hospital types:

- **Part 2 Hospitals:**
  - Chapter 2.1 Common Elements
  - Chapter 2.2 General Hospital
  - Chapter 2.3 Freestanding Emergency Departments
  - Chapter 2.4 Critical Access Hospitals
  - Chapter 2.5 Psychiatric Hospitals
  - Chapter 2.6 Rehabilitative Hospitals
  - Chapter 2.7 Children's Hospital (New)

Part 2 Hospitals

- **Chapter 2.1 Common Elements for Hospitals**
  - 2.1-2.2 Nursing Units (generally not specific)
    - Patient Rooms
    - Windows
    - Patient Privacy
    - Handwashing
    - Toilet Room
    - Bathing
    - Patient Storage
  - 2.1-2.4 Special Patient Care Rooms
    - Airborne Infection Isolation (All Room)
    - (See Occupancy Chapter for PE Room)
    - Seclusion Treatment Room (Non-Medical)

2014 Patient Room Capacity

- **Single Patient Rooms**
  - Med/Surgical Unit…No Change
  - Oncology Unit…change to single
  - Pediatric and Adolescent Oncology…single
  - Intermediate Care Unit…Change to single
  - Coronary Critical Care Unit
  - Ante and Postpartum Rooms
  - LDR and LDRP Rooms
  - Pediatric and Adolescent Unit…single
  - In-Hospital Skilled Nursing Unit
  - Bariatric Care Unit
- **Multiple Patient Rooms**
  - Critical Care Patient Care Areas
  - Pediatric Critical Care Unit
  - NICU
  - Psychiatric Nursing Unit

Part 2 Hospitals

- **Chapter 2.1 Common Elements for Hospitals**
- Minor encroachments (including columns and corridor door swing) that do not interfere with functions as determined by the AHJ shall be permitted to be included when determining minimum clear floor area requirements for a patient room.

- This hand-washing station shall be located at or adjacent to the entrance to the patient room with unobstructed access for use by health care personnel…

Part 2 Hospitals

- **Chapter 2.1 Common Elements for Hospitals**
- Sharps containers shall be placed at a height that allows users to see the top of the container
- Each nursing unit shall have at least one emergency equipment storage location.
- Emergency equipment storage shall be provided under visual observation of staff.
- Emergency equipment storage locations in corridors shall not infringe on the minimum required corridor width.
- Environmental services room: Hand-washing station or hand sanitation station

Part 2 Hospitals

- **Chapter 2.1 Common Elements for Hospitals**
- Single bed Examination Room 120 SF with a 10 feet minimum dimension

- Room size shall permit a room arrangement with a minimum clearance of 3 feet (91.44 centimeters) at each side and at the foot of the examination table.

- A room arrangement in which an examination table, recliner, or chair is placed at an angle, closer to one wall than another, or against a wall to accommodate the type of patient being served shall be permitted

Part 2 Hospitals

- **Chapter 2.1 Common Elements for Hospitals**
- Completely revised section on food and nutrition facilities
- Appendix language on design elements to enhance opportunities for patient ambulation and mobility
- Expanded appendix material on the characteristics and criteria for selecting surface materials
- Patient night-lighting recommendations
- A requirement to place components of electronic health records systems on an uninterruptible power supply
- Cooling for technology equipment rooms must be on emergency power
- Elevator cab size clear dimensions of 5 feet 8 inches wide by 9 feet deep

2014 Medication Safety Zones

2014 Medication Safety Zones

As defined in the *United States Pharmacopeia-National Formulary* (USP–NF), a Medication Safety Zone is:

A critical area where medications are:

- Prescribed
- Orders are entered into a computer or transcribed onto paper documents or
- Medications are prepared or administered

2014 Medication Safety Zones

- Medication errors are among the most common mistakes in health care delivery today, with huge costs to both patients and the health care system.
- The 2014 *Guidelines* includes new requirements for assessing medication safety risks and identifying and designing *medication safety zones*.
- The goal is to help owners improve safety outcomes and reimbursement under CMS's Hospital Value-Based Purchasing Program.

2014 Medication Safety Zones

- **Chapter 2.1 Common Elements for Hospitals**
- Medication Safety Zones: Shall be provided for preparing, dispensing, storing, and administering medications as defined in this section
    - Shall be located out of circulation paths to minimize the potential for distraction and interruption
    - Lighting shall be designed to provide task-specific lighting levels recommended in Chapter <1066> of USP-NF
    - Noise and sound: Medication safety zones shall meet the acoustic design criteria found in Section 1.2-5.1 (Acoustic Design).

2014 Medication Safety Zones

Architectural Features:

- Located out of the circulation paths to minimize distraction
- Organized so that staff can access information and perform required tasks
- Shall have work counters to perform all tasks
- Lighting designed in accordance with Chapter 1066 of the USP-NF for all medication work areas
- Shall meet the acoustic design criteria of Section 1.2-5.1

2014 Medication Safety Zones

Architectural Features:

- A documentation area that also serves as a medication safety zone shall meet the requirements of Section 2.1-2.6.6 (Medication Safety Zone)
- A medication preparation room, self-contained medication dispensing unit, or automated medication dispensing station can serve as a medication safety zone as long as they meet all the requirements above and the specific requirements for the room or dispensing unit

2014 Medication Safety Zones

2014 Revisions for OR Room Classification

The new classification of operating rooms has been changed from the current A, B, C classification. The current classifications are adapted from the American College of Surgeons publication 04GR-0001: *Guidelines for Optimal Ambulatory Surgical Care and Office-Based Surgery* developed by the Board of Governors Committee on Ambulatory Surgical Care and published in May 2000. This classification was primarily based on the anesthetic requirement.

Class A operating rooms provide for minor surgical procedures requiring only topical or local anesthetics with minimal sedation (preoperative oral or intramuscular sedative).

Class B operating rooms provide for minor or major surgical procedures under conscious sedation.

Class C operating rooms provide for major surgical procedures requiring general or regional anesthesia and support of vital bodily functions.

Inhalation (General) Anesthetic
Old School

Anesthesia Workstation

Operating Room Size

Bigger is not always better

The HGRC realized that:

- The *Guidelines* are meant to be minimum standards with patient safety (risk of infection), first and foremost.

- Size creep was previously introduced into each new version of the *Guidelines*

2014 OR Room Classification

The new classifications are based on the invasiveness of what is being done with the patient and the resultant risk of infection.

The new classifications are **Examination Rooms**, **Procedure Rooms**, and **Operating Rooms**.

- With this classification, a short-duration general anesthetic can be administered for a cardioversion or an ECT in a very small space, essentially an Examining Room.
- Various levels of sedation and general anesthetics would be permissible in an interventional GI or radiological suites (Procedure Rooms) that do not require the same airflow or sterility requirements of an operating room .
  –

Examination Rooms

Examination Room:

- Each single-bed examination room shall have a minimum clear floor area of 120 square feet with a minimum clear dimension of 10 feet.

2014 Procedure Rooms

Procedure Room

- A room designated for the performance of procedures that are not defined as an invasive procedure and do not require location in the restricted area of a surgical suite but may use sterile instruments or equipment.
- Procedure rooms shall have a minimum clear floor area of 150 square feet with a minimum clear dimension of 12 feet.
- Endoscopic procedure rooms shall have a minimum clear floor area of 200 square feet.

Outpatient Operating Rooms

Outpatient Operating Rooms (formerly Class B and C Operating Rooms)

- In new construction and renovation, each operating room shall have a minimum **clear floor area of 250** square feet (23.25 square meters) with a minimum clear dimension of 15 feet (4.58 meters) between fixed cabinets and built-in shelves.
- Operating room for surgical procedures that require additional personnel and/or large equipment. Where provided, such operating rooms shall be sized to accommodate the personnel and equipment planned to be in the room during procedures.

Outpatient Operating Rooms

Appendix Material

Operating room for surgical procedures that require additional personnel and/or large equipment. Where provided, such operating rooms shall be sized to accommodate the personnel and equipment planned to be in the room during procedures.

This means it is up to the designer working with the clinicians to determine the actual room size. Keep in mind there are additional requirements from NFPA 99 for the electrical and medical gas at the table.

This must be explained in the Functional Program

Interventional GI – 400 sf

Photo by Tom Krejcie, MD

In-patient Hospital Operating Rooms (and combined inpatient/outpatient)

- Each operating room shall have a minimum clear floor area of 400 square feet with a minimum clear dimension of 20 feet. (360 SF with 18’ clear for renovations)

- Image-guided surgery occurs in rooms equipped with advanced audiovisual technology. Surgical procedures that may require additional personnel and/or large equipment include some cardiovascular, orthopedic, and neurological procedures.
  - Operating rooms of this type shall have a minimum clear floor area of 600 square feet with a minimum clear dimension of 20 feet. (500 with 20’ clear renovation)

Da Vinci Robot

Photo by Tom Krejcie, MD

Operating Room Size

Hybrid Operating Rooms:

- A minimum clear floor area of 650 square feet is recommended for a hybrid operating room. However, the size of a hybrid operating room is highly dependent on the functional requirements of the room as an operating environment as well as the requirements of the imaging equipment it contains, which generally increase the room area requirements.

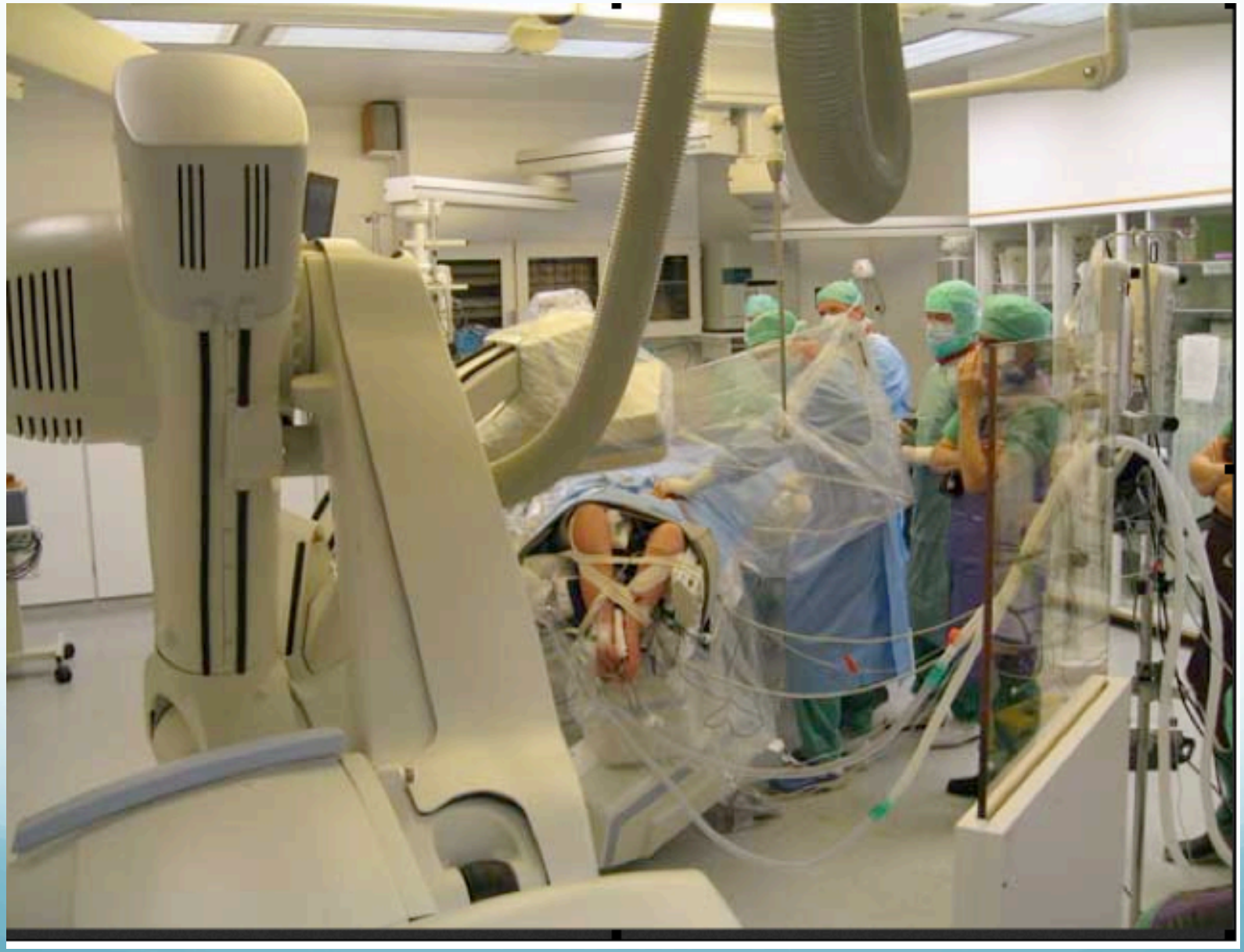
Interventional (EP) Cardiology – 800 sf

Photo by Tom Krejcie, MD

Control Room – 120 sf

Photo by Tom Krejcie, MD

Typical Hybrid OR



Hybrid OR – 1100 sf

Photo by Tom Krejcie, MD

Hybrid OR – 1200 sf

Photo by Tom Krejcie, MD

New to 2014
Children's Hospital

A hospital that identifies itself to the general public as a children's hospital, pediatric health care center, or pediatric center of excellence.

While most of the design requirements are still contained in Chapters 2.1 and 2.2 for General Hospitals, the Children's Hospital has additional requirements.

New to 2014
Children's Hospital

- For the inclusion of the parents and family, more space is required in the patient sleeping rooms
- Equipment Storage Space for toys, furniture, emergency equipment
- Patient Play Areas
- Specially designed toileting facilities with baby changing station
- Infant feeding preparation facilities
- Sedation room outside of the OR, and procedure rooms

Part 3
Outpatient Facilities

Part 3 Outpatient Facilities

Scope:

- These requirements are for outpatient units located in a hospital, outpatient facilities located in a multi use building or a freestanding facility.
- They are generally applied by an AHJ to hospital owned and operated facilities
- The requirements for Outpatient Surgical facilities are generally applied by an AHJ to all licensed (state) or certified (CMS) surgical facilities.
- There must be legislative authority or rule for their enforcement

2014 Organization of Outpatient Facilities

- **Part 3 Outpatient Facilities:**
  - Chapter 3.1 Common Elements
  - Chapter 3.2 Primary Care Facilities
  - Chapter 3.3 Freestanding Outpatient and Diagnostic Fac.
  - Chapter 3.4 Freestanding Birth Centers
  - Chapter 3.5 Freestanding Urgent Care Facilities
  - Chapter 3.6 Freestanding Cancer Treatment Facilities
  - Chapter 3.7 Outpatient Surgical Facilities
  - Chapter 3.8 Office-Based Procedure and Operating Rooms
  - Chapter 3.9 Endoscopy Facilities
  - Chapter 3.10 Renal Dialysis Centers
  - Chapter 3.11 Outpatient Psychiatric Centers
  - Chapter 3.12 Outpatient Rehabilitation Therapy Facilities
  - Chapter 3.13 Mobile, Transportable, and Relocatable Units
  - Chapter 3.14 Dental Facilities (New)

Part 3 Outpatient Facilities

- **Chapter 3.1 Common Elements**
  - **3.1-3 Diagnostic and Treatment Locations**
    - 3.1-3.2 Examination and Treatment Rooms
      - General Purpose Exam Room
      - Special Purpose Exam Room
    - 3.1-3.4 Special Patient Care Rooms
      - Airborne Infection Isolation room
      - Protective Environment Room
    - 3.1-3.5 Support Areas for Patient Care
    - 3.1-3.6 Support Areas for Exam and Treatment Rooms
    - 3.1-3.8 Support Areas for Patients
    - 3.1-3.9 Diagnostic Imaging Services

Part 3 Outpatient Facilities

Chapter 3.1 Common Elements

- 3.1-4 Patient Support Services
- 3.1-5 General Support Services
- 3.1-6 Public and Administrative Areas
- 3.1-7 Design and Construction Requirements
- 3.1-8 Building Systems

Chapter 3.7 Outpatient Surgical Facilities

- 3.7-3.3.6 Support areas for the surgical areas
  - Nurse Station
  - Documentation Area
  - Scrub Facilities
  - Medication Distribution
  - Soiled Workroom
  - Clean workroom
  - Equipment and supply storage
  - Anesthesia equipment
  - Medical gas
  - Stretcher and wheel chair storage
  - Environmental services room
  - Sterilizing Facilities

Chapter 3.7 Outpatient Surgical Facilities

- 3.7-5 through 3.7-8 Other Requirements
  - General Support Services including on-site sterilization facilities and linen service
  - Public and Administrative Areas
  - Design and Construction Requirements
  - Building Systems

2014 Revisions for Outpatient Surgical Facilities

- The previous designation as a Class A Operating Room is now called a Procedure Room
- The operating room for outpatient surgery as been reduced from the Class C requirement of 400 sf to 250 sf
- When operating rooms require more staff and/or larger equipment, such as orthopedic and neurological procedures, it must be sized to meet the clearance recommendations (as large as 600 sf)

2014 Revisions for Outpatient Surgical Facilities

- The PACU is an unrestricted area but must have a direct connection of the semi-restricted areas of the surgical suite
- No more “one way traffic” through the staff locker rooms. These rooms are simply located in the unrestricted area. A control point is still required to monitor movement into the semi-restricted areas

2014 Revisions for Mobile Units

- Divided into those that provide invasive procedures such as cardiac catherization and those that provide non-invasive procedures such as MRI or CT scans
- The non-invasive units are exempted from meeting many of the requirements of outpatient facilities but must still have two filter banks on the HVAC units of 30 and 90 percent efficiency
- A fire alarm system with at least one pull station must be provided in the unit
- Emergency generator is not required unless there is life support equipment in the mobile unit

New Chapter for Freestanding Emergency Facilities

- A freestanding Emergency Facility is an off site emergency department physically separated from the hospital emergency department but that provides all of the same comprehensive emergency services as the hospital emergency department on a 24/7 basis
- Because it is an extension of the emergency department of the hospital, many Authorities having Jurisdiction (AHJs) require it to meet all hospital design and construction standards for Life Safety
- It must have at least one Observation bed with full cardiac monitoring and all of the support services found in the emergency department of the hospital

2014 New Chapter For Dental Facilities

- A new chapter covering family practice dentistry, pediatric dentistry, oral surgery, and orthodontics has been added. These are outpatient facilities where patients have less than a 24-hour stay
- This chapter has very nominal requirements and primarily referrers back to the base chapter for outpatient facilities
- It is unclear who regulates dental facilities in most jurisdictions but these will become nationally recognized standards

2018 Revisions for Mobile Units

- Complete Rewrite of this Chapter
- Removes Relocatabe Units
- Requires a “Certification” of the Unit
- Divided into three Classes of units based on the groups developed by radiological work group.

Part 4 ASHRAE Standard 170 Ventilation of Health Care Facilities

- The 2013 edition of ASHRAE Standard 170 was incorporated into the 2014 edition of the Guidelines along with all issued addenda.
- ASHRAE 170 is under continuous maintenance by a Standing Standards Project Committee (SSPC) which means new addenda are being issued periodically.
- The FGI website at www.fgiguidelines.org makes these addenda available in PDF files as soon as they are published by the ASHRAE 170 committee.
- You must check with your adopting authority to understand if these addenda are also enforceable.

Addendum

Addendum ad

Added ventilation requirements for “special” examination rooms to reduce risk to staff and visitors from undiagnosed infected individuals with gastrointestinal, respiratory, or skin pathogens.

Addendum ae

Changes resulting from coordination with the 2010 FGI *Guidelines for Design and Construction of Health Care Facilities*.

Addendum a

Exception to permit a reduction in the distance between the outdoor air intake and the flue of a gas-fired, packaged rooftop unit

Addendum b

Editorial corrections, including updates to references

Addendum c

Updated terminology for laboratories to align with language in the 2014 FGI *Guidelines*, including provisions for reducing total air change rates in lab spaces in certain circumstances

Addendum d

Clarification of certain exhaust discharge requirements and updates to make terminology consistent between 170 and the FGI *Guidelines* for emergency department public waiting areas and nuclear medicine hot labs

Addendum

Addendum e
Clarification that controls that change the pressure relationship between positive and negative are not permitted in spaces with pressure relationship requirements in Table 7.1 (Design Parameters). Previously, this requirement applied only to airborne infection isolation (AII) rooms.

Addendum f
Clarification of requirements for the primary supply diffuser array for an operating room primary diffuser

Addendum g
Language re: surgery facilities in ASHRAE 170 brought into line with the language used in the 2014 FGI Hospital/Outpatient *Guidelines*

Addendum H
Clarification of requirements for environmental conditions in the sterile processing department to coordinate with AAMI standards for operation of these spaces

Addendum K
Clarification of requirements for electroconvulsive therapy (ECT) rooms

Addendum m
Addition of an alternate form of providing humidification and reorganization of Section 6.6 (Humidifiers) for clarity

Part 4 ASHRAE 170
Ventilation of Health Care Facilities

- Because the FGI Guidelines incorporated ASHRAE 170, some of the Guidelines committee members now serve on the ASHRAE 170 committee so there is representation for FGI on the committee.

- Many revisions to the standard have been to coordinate the two documents and remove duplication of requirements.

- All ventilation and filtration requirements are now found in Part 4.

- Other HVAC requirements such as duct work, ventilation hoods, and mechanical system design are still found in the individual chapters.

Part 4 ASHRAE 170
Ventilation of Health Care Facilities

- Section 4 Compliance
  - New Buildings and Additions and Renovations
  - New Equipment and Equipment Alterations
  - Space Alterations…if meets the definition of "alteration"
- Definition of Alteration:
  - A significant change in the function or size of a space, in the use of its systems, or in the use of its equipment, either through rearrangement, replacement, or addition. Routine maintenance and service shall not constitute an alteration.

Part 4 ASHRAE 170
Ventilation of Health Care Facilities

- Section 6.1 Utilities:
  - Ventilation Upon Loss of Electrical Power. The space ventilation and pressure relationship requirements of Table 7-1 (see page 7) shall be maintained for the following spaces, even in the event of loss of normal electrical power:
  - a. All rooms
  - b. PE rooms
  - c. ORs

- Reserve Heating and Cooling Sources:
  - Heating reserve capacity for OR, Delivery, birthing, labor, recovery, emergency, intensive care, nursery, inpatient rooms.

Part 4 ASHRAE 170
Ventilation of Health Care Facilities

- Outdoor Air Intakes and Exhaust Discharges
  - Outdoor Air Intakes. Outdoor air intakes for air-handling units shall be located a minimum of 25 ft (8 m) from cooling towers and all exhaust and vent discharges. Outdoor air intakes shall be located such that the bottom of the air intake is at least six ft (2 m) above grade. Intakes on top of buildings shall be located a minimum of three ft (1 m) above roof level.

ASHRAE Standard 170 (2008 and 2013)

Package Terminal Air Conditioning Units (PTAC) are not permitted in health care facilities by ASHRAE 170 because they cannot meet this requirement.

7.1 (a) 5. For spaces where Table 7.1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating room HVAC units. Such recirculating room HVAC units shall:

i. not receive nonfiltered, nonconditioned outdoor air;

ii. serve only a single space; and

iii**. provide a minimum MERV 6 filter for airflow passing over any surface that is designed to condense water.** This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.

Revision ASHRAE Standard 170 (Addendum n)

Has been published for its second public review:

- 45-Day Public Review Period from
- July 28, 2017 to September 11, 2017

This proposed addendum starts the process of re-organizing the standard into three components – Hospital, Outpatient and Residential Health to follow the FGI Guidelines move to three separate standards. The intent is not to create any additional requirements for outpatient or residential facilities, but to separate them from hospital requirements, and thus eliminate confusion over which requirements apply to which occupancies. The end result will be clarification of a lower level of requirements for outpatient and residential health facilities by separating them from the higher requirement of inpatient facilities.

Revision ASHRAE Standard 170 (Addendum n)

Package Terminal Air Conditioning Units (PTAC will be permitted residential facilities by ASHRAE 170 as part of the 2018 edition of the FGI Guidelines.

7.1 (a) 5. For spaces where Table 7.1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating room HVAC units. Such recirculating room HVAC units shall:

i. not receive nonfiltered, nonconditioned outdoor air;
ii. serve only a single space, and
iii. provide, as a minimum, **the manufacturer's recommended filter for airflow** passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.

Revision ASHRAE Standard 170 (Addendum n)

- *Exception: Equipment serving non-surgical spaces designed solely for outpatient or residential health, care, and support use shall not be required to comply with 6.3.1.1, 6.3.1.2, 6.3.1.3, or 6.3.1.4, provided the equipment complies with ANSI/ASHRAE Standard 62.1, Table 5.5.1.*

- This exception is for the location of outdoor air intakes for residential facilities such as the 25 feet for relief air requirement (6.3.1.1) and the 3 feet above the roof for air intakes requirement (6.3.1.3) and 6 feet above the grade for air intake requirement (6.3.1.4)

Revision ASHRAE Standard 170 (Revision o)

This addendum is being prepared for public review. It is a “risk based” process of determining ventilation requirements in a health care facility based on very specific criteria regarding functional use of the space, patient population, infection data and so forth.

This process is limited to certain areas inside the health care facility that are not critical care type areas such as surgical areas, recovery rooms and etc.

It is to be employed as an option to the prescriptive requirements for operational functions only and not design.

Look for it to be out for a second public review very soon.

Revision ASHRAE Standard 170 (Addendum Comments)

- To Review and make comments on these revisions, please go to:
- https://www.ashrae.org/standards-research--technology/public-review-drafts

- You must create an account and log into the system. Follow the instructions.

FGI Guidelines
2014 Edition
Residential Health, Care, and Support Facilities

New Nursing Home Design Models

- *(a) Institutional model. This typically includes 40 or more residents in a double-loaded corridor configuration with centralized service/community areas, staff work areas, and resident support areas.

- *(b) Cluster and/or neighborhood model. This typically includes 8 to 18 residents in a cluster with clusters grouped in neighborhoods of 21 to 40 residents. Clusters are located directly adjacent to decentralized service areas, optional satellite staff work areas, and optional decentralized resident living areas such as dining areas.

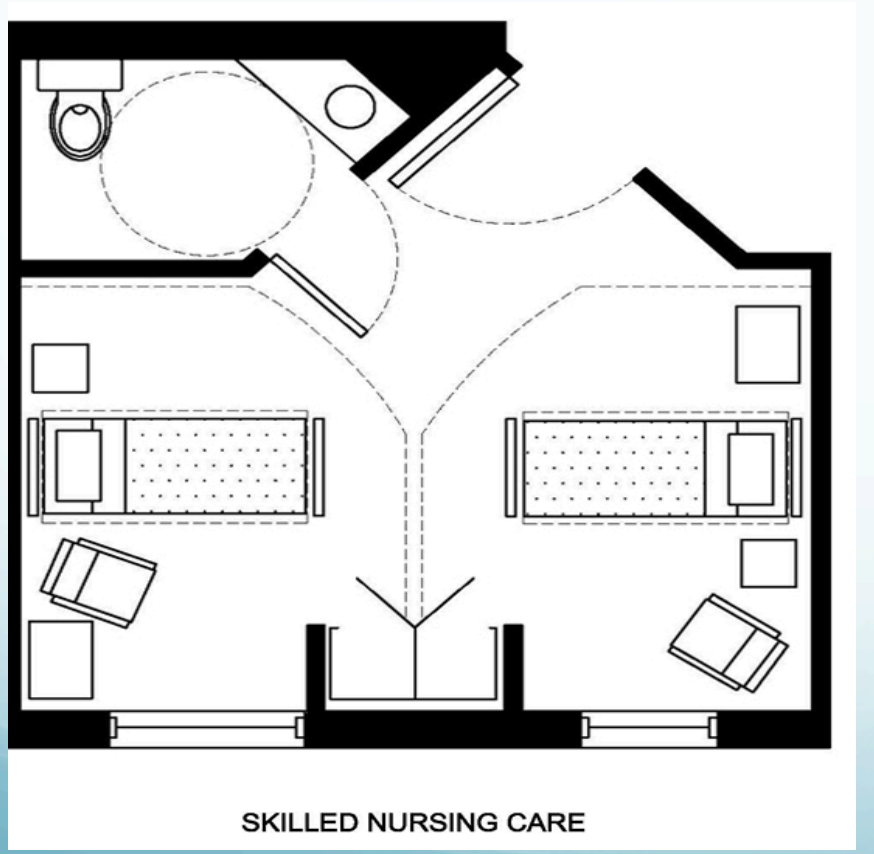
- *(c) Connected household and freestanding household models. These typically include 10 to 24 residents in a group that may be freestanding or located in a larger facility and/or attached to another similar household. The household model includes a residentially scaled kitchen and living room designed in conjunction with staff areas organized to provide resident-centered care. Households shall be permitted to share support spaces/ services.

Everyone Gets a Window

- **(Although these requirements were in the 2010 edition, all of them should be noted and enforced for new facilities or newly added beds)**
  - (a) The ability to accommodate multiple-bed locations, including one where staff members have access to the bed on two sides and at the end
  - (b) A window accessible from a wheelchair or other resident-operated mobility device
  - (c) A wardrobe or a closet accessible from a wheelchair or other resident-operated mobility device
  - *(d) A bed, lounge chair, dresser, nightstand, and side chair, all accessible from a wheelchair or other resident-operated mobility device
  - **(e) Direct access from the room entry to the toilet room, closet or wardrobe, and window, without traveling through the living space of another resident**
  - *(f) Clearance for staff members to use lifting equipment to access the bed, chairs, and toilet

Everyone Gets a Window

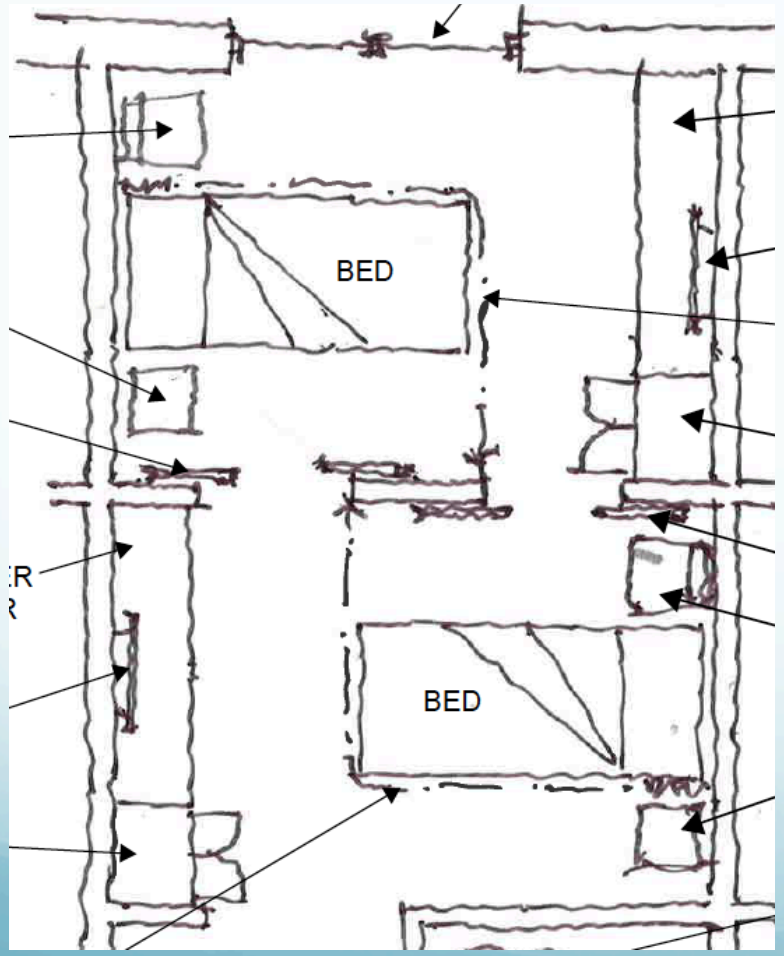
(e) Direct access from the room entry to the toilet room, closet or wardrobe, and window, without traveling through the living space of another resident

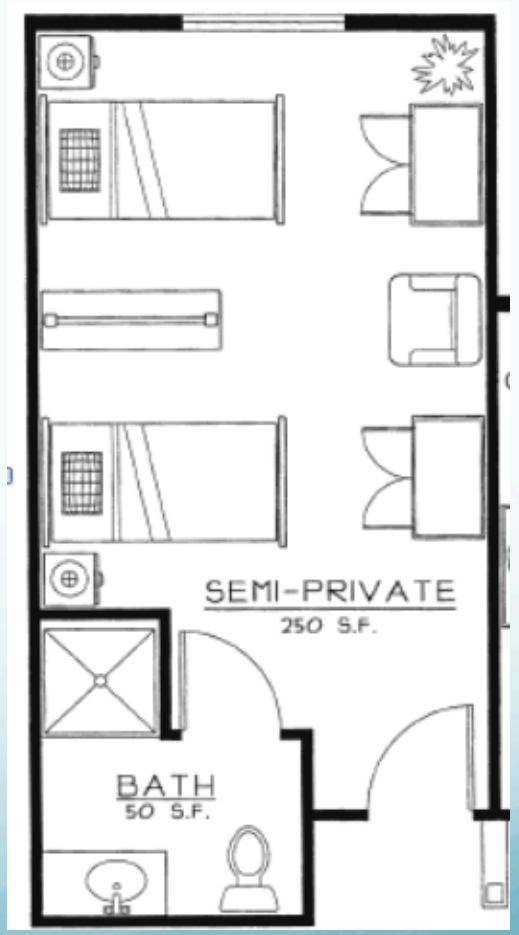


SKILLED NURSING CARE

Skilled Nursing/Rehabilitation

These Designs Do Not Meet the Intent of the 2014 Guidelines





Formal Interpretation

Chapter 3.1-7 Design and Construction Requirements

- Formal Interpretation:
- Question:

  Section 3.1-7.2.2.3 (1)(b) states that "if the outpatient facility serves patients confined to stretchers or wheelchairs, the minimum width of door openings to rooms shall be 3 feet 8 inches." Does this mean that if a patient in a wheelchair is seen in an ambulatory health care setting, that all doors that can possibly be accessed by that wheelchair patient should be 3'-8" wide, or can certain exam rooms or toilet rooms (for example) be designated as wheelchair accessible and therefore limit the number of doors at 3'-8" clear?
- Response:

  After considerable review of Section 3.1-7.2.2.3 (1)(b) and consideration of the universal application this section has on all doors in ambulatory care settings, it is the opinion of the interpretations committee that this section **should not apply to those door openings where patients are transported in wheelchairs,** but only to those door openings where the care model requires patients to be transported on stretchers or gurneys.

Formal Interpretation

Glossary:

Question:

Please confirm that the intent of the definition of an invasive procedure in the 2014 edition requires that all four bulleted conditions be met in order for a procedure to be considered invasive. If only some of the bulleted items apply, but not all, then it is not an invasive procedure and thus may be performed in a procedure room in accordance with the requirements of Section 3.72.3.2 (Procedure Room)

Response:

For a procedure to be "invasive," as defined in the 2014 edition, all four of the bulleted items must apply.

Invasive procedure: A procedure that:

- Penetrates the protective surfaces of a patient's body (e.g., skin, mucous membranes, cornea).
- Is performed in an aseptic surgical field (i.e., a procedure site).
- Generally requires entry into a body cavity.
- May involve insertion of an indwelling foreign body.

Formal Interpretation

Question:

We recently added two airborne infection isolation (AII) rooms to our hospital as part of a renovation project. The AHJ ruled that Section 2.1-2.4.2.4 (1)(c) requires that all edges of an AII room door (i.e., top, sides, and bottom) must be sealed. It was our understanding that a half inch gap is allowed at the bottom of a negative pressure isolation room door to allow for airflow into the room to create the negative pressure. Is it the intent of Section 2.1-2.4.2.4 (1)(c) that there be no gap at the bottom of the door?
(c) Doors shall have edge seals.

Response:
It is not necessary to seal the bottom of an AII room door if the negative pressure of the room can be maintained at a negative 0.01 inches of water column (negative 2.5 pascals) without a door sweep.

Formal Interpretation

Question:
Section 2.2-2.12.1.1 (Nursery Unit-Location) states nurseries shall be "accessible" to the postpartum nursing unit and obstetrical facilities. There is no definition in the glossary for "accessible " as a stand alone term. The question, then, is which term under "location terminology" in the glossary does apply to the nursery. (The 2010 Guidelines used the term "convenient" in Section 2.2.2.12.1.1)

Response:
The intent was to locate the nursery in the obstetrical unit, which includes postpartum rooms, antepartum rooms, LDRP rooms, and related areas.

Formal Interpretation

Question

1: Is it the intent of Section 3.7-3.6.13.2 to allow gross decontamination and debridement of soiled instruments in the sterile processing room? Isn't there a cross contamination potential between the dirty and clean sides of the room?

Response:

Yes. The function of this room is intended for all instrument decontamination functions, including all major cleaning such as scrubbing, soaking, forced air "blow out," and similar functions. Flushing of soiled waste from the surgical suite occurs as indicated in Section 3.7-3.6.14 (Fluid Waste Disposal Facilities). Cross contamination was considered when writing the requirements for the sterile processing room. Compliance with strict operational controls in the room will prevent contact contamination between the dirty and clean sides

Formal Interpretation

Question 2:

The requirements in Section 3.7-3.6.13 appear to be written around immediate use
sterilization, not terminal sterilization for storage. Is it the intent of Section 3.7-5.1 that a single sterile processing room is the only space needed for all sterilization activities in outpatient surgical facilities, regardless of size and scope?

Response:

No.
The intent of this section was to set minimum standards for sterile processing in
outpatient facilities and to have these standards be similar to those required in hospitals. Certain outpatient facilities, particularly large ambulatory surgery centers, may need to go beyond the minimum requirements to meet standards similar to those for hospitals.

Formal Interpretation

Question 3:
If the answer to question 2 is “no,” what is an appropriate treshold for requiring a facility to have separate rooms?

Response:
An infection control risk assessment (ICRA), which is performed as part of the project safety risk assessment, should be used to identify which facilities are better served by having a separate
clean workroom and decontamination room than a single sterile processing room.

Formal Interpretation

- **Chapter 2.1-7** Design Considerations
  - Formal Interpretation:

Question:

Is it the intent of the Guidelines to require facilities to meet the window area requirements found in section 2.1-7.2.2.5 (2) during renovations?

Response:

No, section 2.1-7 .2.2.5 (2) applies only to new construction. The Guidelines requires a window in each patient room to allow light into the room, permit views from the room, and connect the patient with the diurnal cycle of natural light. If an existing patient room has a window providing natural light, then the facility would not be required to increase the window area in existing buildings.

Formal Interpretation

- **Chapter 2.1-8** Utilities
  - Formal Interpretation:

Question:

Is it the intent of the Guidelines to require interior elevator cab dimensions to meet the 5'-8” x 9'-0" as a clear dimension, or are these dimensions meant to specify the size of the platform ?

Response:

The intent of this provision has always been to require clear interior dimensions for patient elevator cabs. The language and dimensions given in the 2010 edition are for clear dimensions minus handrail protrusions.

Formal Interpretation

- **Chapter 2.2-3 Trauma Room in ER**
  - Formal Interpretation:

Question:

If we have a trauma room that is 250 sq. ft., can that same room also function as the bariatric room required by 2.2-3.1.3.6 (5)?

Response:

Yes. The intent of the guideline is to provide adequate space for personnel to care for obese patients. The trauma room minimum space requirement meets that intent.

(Should also consider how much use the room receives as a Trauma vs as a Bariatric Room)

Thanks For All You Do!

Questions?

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