How To Navigate the FGI Guidelines
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Agenda

- About the FGI
- How to use the guidelines
- Patient rooms
- Design exercise
ABOUT THE FACILITY GUIDELINES INSTITUTE

**Mission**
Establish guidelines advised by research to advance quality of care

**Vision**
Leader in guiding the development of healthcare built environment

**Review + revision by federal, state, and private experts**

**To stimulate research in Evidence Based Design**

Created in 1998

**Proceeds fund Research and revisions**

**To stimulate research in Evidence Based Design**
Before FGI, individual states had their own healthcare building codes. They have realized that they can’t keep up at the same pace that FGI can.
FGI REVISIONS

2001 2006 2010 2014

2008
ANSI / ASHE / ASHRAE
Standard 170

Enacted by NC
February 5, 2018
Three Part Review

- Incorporating Appendix/Supporting text
- Cost/Benefit analysis
- Evidence assessment

- Rational understanding/experience
- Clinical practice, policy, or guidelines
- Direct evidence
- Indirect evidence
REVISION COMMITTEE COMPOSITION

- Architects (20%)
- Medical Professionals (18%)
- State AHJ (16%)
- Engineers (13%)
- HC Administrators (10%)
- Federal AHJ's (8%)
- Inf. Control Experts (4%)
- Construction (4%)
Call the local health department to verify which version is in use in that jurisdiction.
2014 vs 2018 FGI

2014
1 book
3 chapters

2018
3 books
Session Law specifies for additional temporary and permanent rulemaking replacing the rules with requirements of the Facilities Guidelines Institute (FGI), Guidelines for the Design and Construction of Hospitals so that licensed hospitals in North Carolina are designed and constructed in compliance with a national standard of practice.

“An Act Directing the Medical Care Commission to Adopt the Recommendations of the American Society of Healthcare Engineering’s Facility Guidelines Institute”
## EXISTING VS PROPOSED CODE

<table>
<thead>
<tr>
<th></th>
<th>EXISTING CODE</th>
<th>PROPOSED CODE</th>
<th>PROPOSED CODE REFERENCE CODES</th>
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<tr>
<td>HOSPITAL ARCHITECTURE</td>
<td>Subchapter 10A NCAC 13B, Licensing of Hospitals</td>
<td>FGI 2014</td>
<td>IBC 2012</td>
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<td>12/31/2017</td>
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<td>ADA and ANSI 117.1</td>
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<td>Accessible and Usable Building and Facilities</td>
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<td>Life Safety Code</td>
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<td>OUTPATIENT ARCHITECTURE</td>
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<td>Subchapter 10A NCAC 13B, Licensing of Hospitals 12/31/2017</td>
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<tr>
<td>HOSPITAL ENGINEERING</td>
<td>Subchapter 10A NCAC 13B, Licensing of Hospitals</td>
<td>ASHE 170 Ventilation of HC Facilities</td>
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<td>OUTPATIENT ENGINEERING</td>
<td>Subchapter 10A NCAC 13B, Licensing of Hospitals</td>
<td>2.2.4. Patient Support</td>
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<tr>
<td></td>
<td>12/31/2017</td>
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</tr>
</tbody>
</table>
SUMMARY OF MAJOR CHANGES BETWEEN 2018 + NC

FUNCTIONAL PROGRAM
Removed requirement for space program and sf from functional program and created a new section; space program

ACOUSTIC DESIGN
Requirements for vibration control and isolation including exterior sources (rail, road) for site selection

SUSTAINABILITY
Mostly appendix. Mercury-free products, waste mgmt to divert from landfills and utility usage monitoring

“PATIENTS OF SIZE” REPLACES “BARIATRIC”
Forecast volumes early and accommodate accordingly (lifts, etc)

EMERGENCY PREPAREDNESS
New appendix commentary to prepare for catastrophic events
SUMMARY OF MAJOR CHANGES BETWEEN 2018 + NC

AIRBORNE INFECTION ISOLATION ROOM
Doors permitted to have self-closer or audible alarm when room is in use

SAFE ROOM
Not required but provides design accommodations (lockable storage, private toilet & shower, family consult room, law enforcement)

EXPANDED TELEMEDICINE
mostly appendix commentary; flexible and not restrictive

PRE + POST PROCEDURE
PACU and Stage II can be combined; allows facilities to better accommodate delivery of care.

STERILE PROCESSING
Two room sterile is now required with little exception. One-way flow

CRITICAL CARE UNITS
All new critical care units to be private patient rooms
<table>
<thead>
<tr>
<th>Room</th>
<th>Use</th>
<th>Design Requirements</th>
</tr>
</thead>
</table>
| Exam or treatment room   | Patient care that may require high-level disinfected or sterile instruments but does not require the environmental controls of a procedure room | **Flooring:** cleanable and wear-resistant for the location; stable, firm, and slip-resistant  
**Wall finishes:** washable  
**Ceiling:** cleanable with routine housekeeping equipment; lay-in ceiling permitted |
|                          | Unrestricted area                                                   | **Flooring:** cleanable and wear-resistant for the location; stable, firm, and slip-resistant  
**Floor and wall base assemblies in cystoscopy, urology, and endoscopy procedure rooms and endoscope processing rooms:** monolithic floor with integral coved wall base carried up the wall a minimum of 6 inches  
**Wall finishes:** washable  
**Wall finishes in endoscopy procedure room and endoscope processing room:** washable; free of fixtures, open joints, or crevices  
**Ceiling:** smooth and without crevices, scrubbable, non-absorbent, non-perforated; capable of withstanding cleaning chemicals; lay-in ceiling permitted if gasketed or each ceiling tile weighs at least one pound per square foot and no perforated, regular, serrated, or highly textured tiles |
| Procedure room           | Patient care that requires high-level disinfection of the room, sterile instruments, and some environmental controls but does not require the environmental controls of an operating room  
**Endoscopic procedures** |                                                                                     |
|                          | Semi-restricted area                                                 | **Flooring:** cleanable and wear-resistant for the location; stable, firm, and slip-resistant  
**Floor and wall base assemblies:** monolithic floor with integral coved wall base carried up the wall a minimum of 6 inches  
**Wall finishes:** washable; free of fixtures, open joints, or crevices  
**Ceiling:** monolithic, scrubbable, capable of withstanding cleaning and or disinfecting chemicals, gasketed access openings |
| Operating room           | Invasive procedures  
**Any procedure during which the patient will require physiological monitoring and is anticipated to require active life support** | **Flooring:** cleanable and wear-resistant for the location; stable, firm, and slip-resistant  
**Floor and wall base assemblies:** monolithic floor with integral coved wall base carried up the wall a minimum of 6 inches  
**Wall finishes:** washable; free of fixtures, open joints, or crevices  
**Ceiling:** monolithic, scrubbable, capable of withstanding cleaning and or disinfecting chemicals, gasketed access openings |
<table>
<thead>
<tr>
<th>Room Type</th>
<th>Location</th>
<th>Design Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Class 1 Imaging room</strong></td>
<td>Unrestricted area</td>
<td><em>Flooring:</em> cleanable and wear-resistant for the location; stable, firm, and slip-resistant</td>
</tr>
<tr>
<td></td>
<td>Accessed from an unrestricted area</td>
<td><em>Wall finisher:</em> washable</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Ceiling:</em> cleanable with routine housekeeping equipment; lay-in ceiling permitted</td>
</tr>
<tr>
<td><strong>Class 2 Imaging room</strong></td>
<td>Semi-restricted area</td>
<td><em>Flooring:</em> cleanable and wear-resistant for the location; stable, firm, and slip-resistant</td>
</tr>
<tr>
<td></td>
<td>Accessed from an unrestricted or a semi-restricted area</td>
<td><em>Floor and wall base assemblies:</em> monolithic floor with integral coved wall base carried up the wall a minimum of 6 inches</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Wall finisher:</em> washable; free of fissures, open joints, or crevices</td>
</tr>
<tr>
<td></td>
<td></td>
<td><em>Ceiling:</em> smooth and without crevices, scrubbable, non-absorbent, non-perforated; capable of withstanding cleaning chemicals; lay-in ceiling permitted if gasketed or each ceiling tile weighs at least one pound per square foot and no perforated, regular, serrated, or highly textured tiles</td>
</tr>
<tr>
<td><strong>Class 3 Imaging room</strong></td>
<td>Restricted area</td>
<td><em>Flooring:</em> cleanable and wear-resistant for the location; stable, firm, and slip-resistant</td>
</tr>
<tr>
<td></td>
<td>Accessed from a semi-restricted area</td>
<td><em>Floor and wall base assemblies:</em> monolithic floor with integral coved wall base carried up the wall a minimum of 6 inches</td>
</tr>
<tr>
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<td></td>
<td><em>Wall finisher:</em> washable; free of fissures, open joints, or crevices</td>
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<tr>
<td></td>
<td></td>
<td><em>Ceiling:</em> monolithic, scrubbable, capable of withstanding cleaning and or disinfecting chemicals, gasketed access openings</td>
</tr>
</tbody>
</table>
NEW REQUIREMENTS OF FGI GUIDELINES

FUNCTIONAL PROGRAM PRE-PLANNING

SAFETY RISK ASSESSMENT

MEDICATION SAFETY
SAFETY RISK ASSESSMENT TOOL

The Center for Health Design presents

Safety Risk Assessment Tool

WHAT is the SRA?

The Safety Risk Assessment (SRA) Toolkit is:
- a proactive process that can mitigate risk
- a discussion prompt for a multidisciplinary team
- an evidence-based design (EBD) approach to identify solutions.

The SRA targets six areas of safety (infections, falls, medication errors, security, injuries of behavioral health, and patient handling) as required in the FGI Guidelines.

LEARN MORE

LOG IN & GET STARTED

Introducing the Safety Risk Assessment Toolkit

Watch the user guide video

This is a free toolkit made possible with funding by the Agency for Healthcare Research and Quality (AHRQ)®.

WHY USE THE SRA?

Safety is a top priority in healthcare. Designing for safety needs a systematic approach.

HOW DO WE USE THIS SRA TOOLKIT?

- Determine relevant RISK COMPONENTS
- Use the HISTORICAL DATA page to identify vulnerabilities
- Create an ASSESSMENT for your project
- Track progress towards objectives with the SAFETY ALIGNMENT TOOL
- Identify solutions with the DESIGN CONSIDERATIONS

ncHEA
nc healthcare engineers association
# MEDICATION SAFETY ZONES

## Summary of New 2014 Guidelines Medication Safety Zone Requirements

<table>
<thead>
<tr>
<th>Guidelines Location</th>
<th>Medication Safety Zone Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CHAPTER 1.1: PLANNING, DESIGN, CONSTRUCTION, AND COMMISSIONING</strong></td>
<td></td>
</tr>
</tbody>
</table>
| Medication safety portion of safety risk assessment (Section 1.2-5.3) | - Medication safety risk assessment is a component of the new safety risk assessment, which is designed to improve patient and caregiver safety. See FGI Guidelines Update #1: *Designing for Safety*.  
- Requires the governing body to identify the medication safety zones in a project as a component of the safety risk assessment report |
| **PART 2: HOSPITALS** |
| Chapter 2.1: Common Elements for Hospitals (Section 2.1-2.6.6) | - Provides design requirements for medication safety zones, based on USP-NF standards:  
  - Location to minimize distractions and interruptions  
  - Work space organization, including consideration of personnel and medication safety technology and equipment impacts on design  
  - Sound and noise attenuation by meeting the criteria in Table 1.2-4 (Minimum Design Room Sound Absorption Coefficients), Table 1.2-2 (Maximum Design Criteria for Noise in Interior Spaces Caused by HVAC and Other Building Systems), and Table 1.2-6 (Design Criteria for Minimum Sound Isolation Performance Between Enclosed Rooms).  
  - Task-specific lighting levels found in USP-NF, Chapter 1066  
- Includes reference to requirements for sharps containers, including placement, in medication safety zones based on OSHA (2001) and NIOSH (1998) standards and guidance. |
| Chapters 2.2–2.7 (All hospital types) | - Medication safety zone requirements are addressed for each of the different types of hospitals.  
- Sends the reader back to Section 2.1-2.6.6 for the medication safety zone requirements detailed in the Common Elements chapter. |
ASHRAE TOOLS

Read published interpretations for the following editions:

- FORMAL INTERPRETATIONS OF 2014 HOSPITAL/OUTPATIENT GUIDELINES (UPDATED 3/10/17)
- FORMAL INTERPRETATIONS OF 2014 RESIDENTIAL GUIDELINES (10/13/16)
- FORMAL INTERPRETATIONS OF 2010 GUIDELINES (UPDATED 3/10/17)
- FORMAL INTERPRETATIONS OF 2006 GUIDELINES (UPDATED 9/19/08)
- FORMAL INTERPRETATIONS OF 2001 GUIDELINES (UPDATED 12/1/03)

Find published interpretations for ANSI/ASHRAE/ASHE 170: Ventilation of Health Care Facilities:

- INTERPRETATIONS FOR ASHRAE 170-2013 (PART 4 OF THE 2014 FGI GUIDELINES)
- INTERPRETATIONS FOR ASHRAE 170-2008 (PART 6 OF THE 2010 FGI GUIDELINES)
How to use the guidelines
# STRUCTURE OF REQUIREMENTS

## 1 GENERAL Requirements

### 2.1 COMMON Requirements for Hospitals

<table>
<thead>
<tr>
<th>2.2 Hospitals</th>
<th>2.3 Freestanding EDs</th>
<th>2.4 Critical Access</th>
<th>2.5 Psych Hospitals</th>
<th>2.6 Rehab Hospitals</th>
<th>2.7 Children’s Hospitals</th>
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</thead>
<tbody>
<tr>
<td>2.2.2. Nursing Units</td>
<td>2.2.2. Nursing Units</td>
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<td>2.2.2. Nursing Units</td>
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<tr>
<td>2.2.3. D+T</td>
<td>2.2.3. D+T</td>
<td>2.2.3. D+T</td>
<td>2.2.3. D+T</td>
<td>2.2.3. D+T</td>
<td>2.2.3. D+T</td>
</tr>
<tr>
<td>2.2.4. Patient Support</td>
<td>2.2.4. Patient Support</td>
<td>2.2.4. Patient Support</td>
<td>2.2.4. Patient Support</td>
<td>2.2.4. Patient Support</td>
<td>2.2.4. Patient Support</td>
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<td>2.2.5. General Support</td>
<td>2.2.5. General Support</td>
<td>2.2.5. General Support</td>
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<td>2.2.5. General Support</td>
<td>2.2.5. General Support</td>
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<tr>
<td>2.2.7. Design + Construction</td>
<td>2.2.7. Design + Construction</td>
<td>2.2.7. Design + Construction</td>
<td>2.2.7. Design + Construction</td>
<td>2.2.7. Design + Construction</td>
<td>2.2.7. Design + Construction</td>
</tr>
</tbody>
</table>
1. GENERAL REQUIREMENTS

- Use Part 1 as a resource for design considerations: Acoustic, Wayfinding, Fall Prevention, etc.
- Most information will be found in the appendix.
APPENDICES

- Typically found at the bottom of the page
- Not intended to be enforceable
- Often adds recommendations or clarity

APPENDIX

A2.2.2.2 Patient mobility considerations for nursing unit design. See appendix section A2.1-2.1 (Accommodations to encourage patient mobility) for mention of this aspect of nursing unit design.

A2.2.2.2.2.1 In new construction, single-bed rooms should be at least 12 feet (3.66 meters) wide by 13 feet (3.96 meters) deep (156 square feet, or 14.86 square meters) exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules. These spaces should accommodate comfortable furniture for family members (one or two) without blocking staff members’ access to patients. Movable seating to support visitation and training around the patient should be available in quantities sufficient to meet the needs described in the functional program.

Efforts should be made to provide the patient with some control of the room environment.
MORE SPECIFIC TERMINOLOGY

- **In:** Located within the identified area or room

- **Directly Accessible:** Connected to the identified area or room via a doorway, pass-through, or opening without going through an intervening room or public area.

- **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
DESIGN TERMINOLOGY

- **Clearance:** The shortest unencumbered distance between the outermost dimensions of a specified object, and specified reference points

- **Clear Dimension:** An unobstructed room dimension exclusive of built in casework and equipment and available for functional use

- **Clear Floor Area:** The floor area of a defined space available for functional use exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, vestibules, anterooms, general circulation or auxiliary work areas

- **Bay:** Space for patient care with 1 hard wall (headwall) and 3 soft walls (curtains, screens, etc.)

- **Cubicle:** Space for patient care with one opening and no door enclosed on 3 sides with full or partial height partitions

- **Room:** A space enclosed by hard walls and having a door
Directions assume minimum consensus requirement

Hospitals may need to exceed minimums to meet needs

Minimums change as technology, techniques, and research change

See appendices for directions that differ from or exceed the minimums
Patient rooms
SECTION 1   GENERAL REQUIREMENTS

Applies to: all healthcare types under the FGI umbrella

Contains: considerations for acoustics, sustainability, wayfinding, and design for bariatric patients.

Example requirements: design criteria for noise in interior spaces

- Patient rooms in this table require a maximum of 45 decibels of ambient noise caused by building systems
SECTION 2  COMMON REQUIREMENTS

- **Applies to:** patient rooms for all hospital types and departments

- **Contains:** universal design concepts such as engineering requirements, windows, privacy, and storage.

- May be further amended, clarified, or added on to within the facility chapters (2.2 through 2.7)
# Patient Room NC vs FGI MEP Requirements

<table>
<thead>
<tr>
<th>Location</th>
<th>Oxygen</th>
<th>Vacuum</th>
<th>Medical Air</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Room</td>
<td>2/room</td>
<td>3/room</td>
<td>1/room</td>
</tr>
<tr>
<td>Delivery Rooms</td>
<td>2/room</td>
<td>3/room</td>
<td>1/room</td>
</tr>
<tr>
<td>Cystoscopy Room</td>
<td>1/room</td>
<td>3/room</td>
<td>-</td>
</tr>
<tr>
<td>Special Procedures Room</td>
<td>1/room</td>
<td>3/room</td>
<td>1/room</td>
</tr>
<tr>
<td>Other anesthetizing Locations</td>
<td>1/room</td>
<td>3/room</td>
<td>1/room</td>
</tr>
</tbody>
</table>
PATIENT ROOM  OTHER COMMON REQUIREMENTS

- **Windows:** Size must be at minimum 8% of the floor area of the room except in renovations
- **Storage:** Patient belonging storage required
- **Privacy:** A means of privacy must be provided
- **Ceiling Height:** Minimum 7’10”
- **Door Opening:** Minimum 45.5” x 83.5” clear unless otherwise allowed
# Patient Room Maximum Number of Beds

<table>
<thead>
<tr>
<th></th>
<th>New Construction</th>
<th>Renovation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Most types</td>
<td>1 per room. 2 per room where allowed by AHJ. 1 required for LDR, LDRP, or Bariatric Care Rooms.</td>
<td>Most types Current capacity or 4 per room, whichever is less</td>
</tr>
<tr>
<td>Critical Care</td>
<td>No direct requirement</td>
<td>Critical Access Hospital Current capacity or 2 per room, whichever is less</td>
</tr>
<tr>
<td>Psychiatric Hospital</td>
<td>2 per room</td>
<td></td>
</tr>
</tbody>
</table>
PATIENT ROOM  ADDITIONAL REQUIREMENTS

- Facility + Department Requirements: Found in chapters 2.2 through 2.7
- Facility Requirements: Vary by service and function (example: Psych vs. General room sizes)
- Department Requirements: A second level of detail. Dependent on service.
# Patient Room Size Requirements

<table>
<thead>
<tr>
<th></th>
<th>New Construction</th>
<th>Renovation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Private</td>
<td>Semi-Private</td>
</tr>
<tr>
<td><strong>General Hospital - Section 2.2</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
<tr>
<td>Med Surg</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
<tr>
<td>Intermediate Care</td>
<td>150 SF</td>
<td>150 SF / bed</td>
</tr>
<tr>
<td>Critical Care</td>
<td>200 SF</td>
<td>200 SF / bed</td>
</tr>
<tr>
<td>Bariatric Care</td>
<td>200 SF</td>
<td>not allowed</td>
</tr>
<tr>
<td>LDRP</td>
<td>340 SF</td>
<td>not allowed</td>
</tr>
<tr>
<td>Post Partum as part of LDRP model</td>
<td>150 SF</td>
<td>150 SF / bed</td>
</tr>
<tr>
<td>NICU</td>
<td>150 SF</td>
<td>150 SF / bed</td>
</tr>
<tr>
<td>Pediatrics</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
<tr>
<td>Oncology</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
<tr>
<td>Skilled Nursing</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
<tr>
<td>Psychiatric Care</td>
<td>100 SF</td>
<td>80 SF / bed</td>
</tr>
<tr>
<td><strong>Specialist Hospital - Section 2.5 - 2.7</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Psychiatric Hospital - Psychiatric Care</td>
<td>100 SF</td>
<td>80 SF / bed</td>
</tr>
<tr>
<td>Psychiatric Hospital - Skilled Nursing</td>
<td>120 SF</td>
<td>100 SF / bed</td>
</tr>
<tr>
<td>Rehab Hospital - All Room Types</td>
<td>140 SF</td>
<td>125 SF / bed</td>
</tr>
<tr>
<td>Children’s Hospital - All Room Types</td>
<td>120 SF</td>
<td>120 SF / bed</td>
</tr>
</tbody>
</table>
ROOM SIZE REQUIREMENT NOTES

NET CLEAR AREA
Requirements are for net clear areas – clear of cabinets, fixed furniture, toilet rooms, alcoves, vestibules

ROOM SIZE VARIATIONS
Room sizes vary by hospital type, department type, patient mobility, room equipment, patient access needs, and functional need

RENOVATION EXCEPTIONS
FGI makes some exceptions for renovation work, requiring less space.

CLEARANCE FOR ROOM TYPES
FGI adds clearance requirements for both private + semi-private rooms

BED DIMENSION 40” x 96”
Determine clearances based upon accurate bed size – be careful with REVIT model!

ALL HOSPITAL TYPES
Most clearance requirements apply to all hospital types unless noted in chapter 2.2 – 2.7
NET CLEAR AREA  SECTION 2.2

ROOM SIZE: 132 SF
NET SIZE: 100 SF

MOBILE FURNITURE & EQUIPMENT: OK

TOILET ROOMS & CLOSETS

ENTRY ALCOVES

BUILT-IN FURNITURE & CABINETS

ROOM SIZE: 189 SF
NET SIZE: 150 SF

MOBILE FURNITURE & EQUIPMENT: OK

TOILET ROOMS & CLOSETS

ENTRY ALCOVES

BUILT-IN FURNITURE & CABINETS
GENERAL PATIENT ROOM CLEARANCES

- 3’ on both sides of the bed
- 3’ at the foot of the bed
- 4’ at the foot of the bed: in semi-privates to allow beds to pass each other
- No fixed furniture, casework, or equipment can encroach
INTERMEDIATE CARE ROOM CLEARANCES

- 4’ on both sides of the bed
- 4’ at the foot of the bed
- 4’ between beds: in semi-privates to allow beds to pass each other
CRITICAL CARE ROOM CLEARANCES

- 5’ on transfer side of the bed
- 4’ on non-transfer side of the bed
- 5’ at the foot of the bed
- 1’ at the head of the bed
- 8’ between beds: in semi-privates
BARIATRIC CARE ROOM CLEARANCES

- 5’ on both sides of the bed
- 5’ at the foot of the bed
- No semi-private bariatric rooms allowed
**OTHER ROOM TYPE REQUIREMENTS**

**HYBRID OPERATING ROOM**
- 24’ minimum dimension
- 22’ allowed in renovation

**CT SCAN**
- 4’ clear on all sides of gantry
- Toilet requirement removed

**MRI**
- 4’ clear on all sides of gantry
- Directly accessible handwash
- Acoustic control

**EMR + IT**
- EMR must be on UPS
- IT equipment must be on emergency power

**PUBLIC HANDWASH STATIONS**
- Hands free fittings

**ELEVATOR CAB SIZE**
- 5’8” wide by 9’ deep clearance
FGI SECTION SUMMARY

SEARCH ALL REQUIREMENTS
1 General
2.1 Common
2.2-2.7 Facility + Dept

MINIMUM REQUIREMENT
FGI only provides the minimum requirement

NC vs FGI
FGI is more comprehensive, specific, and focused than NC

PATIENT ROOM TYPE
Consider how room type impacts size, clearances, and number of beds
Design exercise
INPATIENT BIRTHING UNIT

Use the FGI to determine an initial space program:

- Which spaces are required?
- What are the required features of the spaces?
- What is optional/recommended?
- Where to begin?
### Part 2 Hospitals

#### 2.1 Common Elements for Hospitals

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>2.1-1</td>
<td>General</td>
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<td>2.1-1.1</td>
<td>Application</td>
</tr>
<tr>
<td>2.1-1.2</td>
<td>Functional Program</td>
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<tr>
<td>2.1-1.3</td>
<td>Site</td>
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#### 2.2 Specific Requirements for General Hospitals

<table>
<thead>
<tr>
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<tr>
<td>2.2-1</td>
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#### 2.2-2 Nursing Units

<table>
<thead>
<tr>
<th>Code</th>
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<tr>
<td>2.2-2.1</td>
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</tr>
<tr>
<td>2.2-2.3</td>
<td>Oncology Nursing Unit</td>
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<td>2.2-2.4</td>
<td>Pediatric and Adolescent Oncology Nursing Unit</td>
</tr>
<tr>
<td>2.2-2.5</td>
<td>Intermediate Care Unit</td>
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#### 2.1-2 Nursing Units and Other Patient Care Areas

<table>
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<tr>
<td>2.1-2.1</td>
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<td>2.1-2.2</td>
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</tr>
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</tr>
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<td>2.1-2.4</td>
<td>Special Patient Care Rooms</td>
</tr>
<tr>
<td>2.1-2.5</td>
<td>Support Areas for Patient Care—General</td>
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<tr>
<td>2.1-2.6</td>
<td>Support Areas for Nursing Units and Other Patient Care Areas</td>
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<td>2.1-2.7</td>
<td>Support Areas for Staff</td>
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<td>2.1-2.8</td>
<td>Support Areas for Families, Patients, and/or Visitors</td>
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#### 2.1-3 Diagnostic and Treatment Areas

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 előző oldalára törölve
11.1 General
11.2 Antepartum and Post Partum Unit
11.3 LDR & LDRP Rooms
11.4 Special Patient Care Rooms
11.5 Support Areas for Patient Care
11.6 Support Areas for the Obstetrical Unit
11.7 Support Areas for Staff
11.8 Support Areas for Families, Patients, and Visitors
11.9 Cesarean Delivery Room
11.10 Support Areas for the Cesarean Delivery Suite
11.11 Support Areas for Cesarean Staff
11.12 Support Areas for Cesarean Families, Patients, and Visitors
11.13 Recovery Space
11.14 Support Areas for Recovery Spaces
2.2-2.2.2.2 Space requirements

*(1) Area

(a) Patient rooms shall be sized to accommodate the needs of the clinical services provided.
(b) Patient rooms shall have a minimum clear floor area of 120 square feet (11.15 square meters) in single-bed rooms and 100 square feet (9.29 square meters) per bed in multiple-bed rooms.

(2) Clearances (See “bed size” in the glossary.)

(a) The dimensions and arrangement of rooms shall provide a minimum clearance of 3 feet (91.44 centimeters) between the sides and foot of the bed and any wall or any other fixed obstruction.
(b) In multiple-bed rooms, a minimum clearance of 4 feet (1.22 meters) shall be available at the foot of each bed to permit the passage of equipment and beds.

(3) Where renovation work is undertaken and it is not possible to meet the above minimum standards, authorities having jurisdiction shall be permitted to grant approval to deviate from this requirement. In such cases, patient rooms shall have a minimum clear floor area of 100 square feet (9.29 square meters) in single-bed rooms and 80 square feet (7.43 square meters) per bed in multiple-bed areas.

APPENDIX

A2.2-2.2 Patient mobility considerations for nursing unit design. See appendix section A2.1-2.1 (Accommodations to encourage patient mobility) for mention of this aspect of nursing unit design.

A2.2-2.2.2.2 (1) In new construction, single-bed rooms should be at least 12 feet (3.66 meters) wide by 13 feet (3.96 meters) deep (156 square feet, or 14.86 square meters) exclusive of toilet rooms, closets, lockers, wardrobes, alcoves, or vestibules. These spaces should accommodate comfortable furniture for family members (one or two) without blocking staff members’ access to patients. Movable seating to support visitation and teaming around the patient should be available in quantities sufficient to meet the needs described in the functional program. Efforts should be made to provide the patient with some control of the room environment.

2.1-2.2.6 Patient Toilet Room

2.1-2.2.6.1 General. Where required by other sections of the Guideline, each patient shall have access to a toilet room without having to enter a corridor.

2.1-2.2.6.2 In nursing units, the patient toilet room shall serve no more than one patient room and no more than two patients.

2.1-2.2.6.3 Room features. The patient toilet room shall be equipped with the following:

(1) A toilet.
(2) A hand-washing station. See Section 2.1-2.6.5 (Hand-Washing Station) for requirements.
(3) A bedpan washer. See Section 2.1-8.4.3.7 (Bedpan washers) for requirements.
2.2-2.11.3 LDR and LDRP Rooms

2.2-2.11.3.1 Capacity. Each LDR or LDRP room shall be for single occupancy.

2.2-2.11.3.2 Space requirements

*(1) LDR and LDRP rooms shall have a minimum clear floor area of 340 square feet (31.57 square meters) with a minimum clear dimension of 13 feet (3.96 meters). This includes an infant stabilization and resuscitation space with a minimum clear floor area of at least 40 square feet (3.7 square meters).

(a) The infant stabilization and resuscitation space shall be an area in the room that is distinct from the mother’s area.
(b) Where a crib and reclining chair for a support person are provided, additional space to accommodate them shall be included in the LDR or LDRP room.

(2) When renovation work is undertaken and it is not possible to meet the above minimum square-footage standards, existing LDR or LDRP rooms shall be permitted to have a minimum clear floor area of 200 square feet (18.58 square meters).

2.2-2.11.3.6 Patient bathroom. Each LDR or LDRP room shall have direct access to a private toilet room with shower or tub.

2.2-2.11.3.7 Patient bathing facilities

(1) Where bathing facilities are not provided in patient rooms, there shall be at least one shower and/or bathtub for each six beds or fewer and for each fraction thereof.
(2) A toilet and hand-washing station shall be provided in or directly accessible to each bathing facility.

A2.2-2.11.3.2 (1) A minimum clear dimension of 15 feet (4.57 meters) is preferable to accommodate the equipment and staff needed for complex deliveries.
11.2 + 11.3 RECOMMENDATIONS

ANTEPARTUM & TOILET

• 206 Net SF
• 120 SF clear min., 12’ x 13’ min. dimension
• Maintain recommended min clearances around sides of bed
• 50 SF for patient toilet room included

POSTPARTUM & TOILET

• 240 Net SF
• 150 SF clear min., 12’ min. dimension
• 50 SF for patient toilet room included

LDR/LDRP & Toilet

• 430 Net SF
• 340 SF clear min., 15’ min. dimension preferred
• 40 SF infant stabilization area included
• 50 SF for family zone, fixed components assumed
• 50 SF for patient toilet room included

• Does NOT include equipment storage in room
• Windows not required in LDR, but recommended
11.4 SPECIAL PATIENT CARE ROOMS

**ISOLATION ROOMS**
Airborne Infection Isolation rooms (AII) are not automatically required for obstetrical units

**ICRA FINDINGS**
The need for an AII room should be based on the findings of an ICRA

**INFECTION PREVENTION TEAM**
Critical to involve Infection Prevention team + Facilities Mgmt early in design
11.6 SUPPORT AREAS

- 6.1 Nurse Station
- 6.2 Documentation Area
- 6.3 Nurse Supervisor Office
- 6.4 Unused
- 6.5 Unused

When there is no additional description or reference section, consult the general section at the beginning of the Part with the corresponding number:

- 2.2 - 2.11.6.1 → 2.1 - 2.6.1
- 2.2 - 2.11.6.2 → 2.1 - 2.6.2
- 2.2 - 2.11.6.3 → 2.1 - 2.6.3
11.6.6 MEDICATION SAFETY

**MEDICATION SAFETY ZONES**
New designation in 2014.

**DECREASES MEDICATION ERRORS**
By increasing visibility, security, ergonomics to enhance focus + organization

**NEW DESIGN STANDARDS**
References several additional design standards

**SAFETY RISK ASSESSMENT**
Required to determine number and size of zones
11.6.6 MEDICATION SAFETY

2.1-2.6.6 Medication Safety Zones

2.1-2.6.6.1 General

(1) Application. Medication safety zones shall be provided for preparing, dispensing, storing, and administering medications as defined in this section.

(a) A medication preparation room, self-contained medication dispensing unit, automated medication-dispensing station, or other system approved by the AHJ shall be permitted to serve as a medication safety zone.

(b) The number and location of medication safety zones for patient care areas shall be as determined in the medication safety risk assessment. See Section 1.2-3.5 (Medication Safety).

(2) Design requirements. Medication safety zones shall meet the following physical environment requirements that promote safe medication use:

(a) Medication safety zones shall be located out of circulation paths to minimize the potential for distraction and interruption.

(b) Work space organization for medication safety zones shall be designed so that staff can access information and perform required tasks. See Section 1.2-3.5 (Medication Safety).

(c) Work counters shall provide space to perform tasks referenced in paragraph (b).

(d) Lighting shall be designed to provide task-specific lighting levels recommended in Chapter <1066> of USP-NF for the following work areas when they are provided:

(i) Designated computer entry and handwritten order-processing locations

(ii) Pharmacy medication filling and checking

(iii) Pharmacy patient counseling

(iv) Sterile compounding and preparation

(v) Storeroom for pharmacy medication

(vi) Medication preparation areas

(vii) Medication administration work areas, including the patient room

1.2-3.5 Medication Safety

1.2-3.5.1 Medication Safety Elements of the Safety Risk Assessment

1.2-3.5.1.1 Number and location of medication safety zones. The governing body shall identify the number and location of medication safety zones for the project and include them in the SRA report.

1.2-3.5.1.2 Design features. Medication safety zones shall meet the requirements found in Section 2.1-2.6.6 (Medication Safety Zones) or Section 3.1-3.6.6 (Medication Safety Zones).

1.2-3.5.2 Medication Safety Response

The design team shall incorporate the required medication safety design features in the project design documents.
*2.1-2.6.6.2 Work areas for preparing, dispensing, and administering medications

(1) Medication preparation room
   (a) This room shall be under visual control of the nursing staff.
   (b) This room shall contain the following:
      (i) Work counter
      (ii) Hand-washing station
      (iii) Lockable refrigerator
      (iv) Locked storage for controlled drugs
      (v) Sharps containers, where sharps are used
   (c) Where sharps containers are provided, the following requirements shall be met:
      *(ii) Sharps containers shall be placed at a height that allows users to see the top of the container.
   (d) When a medication preparation room is used to store one or more self-contained medication-dispensing units, the room shall be designed with space to prepare medicines when the self-contained medicine-dispensing unit(s) are present.
   (e) When a medication preparation room is used to compound sterile preparations, the following requirements shall be met:
      (i) Requirements, with the exception of the ventilation requirements, in Chapter <797> of the USP-NF: Guidebook to Pharmaceutical Compounding—Sterile Preparations
      (ii) Ventilation requirements in Table 7-1 (Design Parameters) in Part 4 (ANSI/ASHRAE/ASHE Standard 170)

(2) Self-contained medication dispensing units (e.g., robotic devices used in pharmacies), automated medication-dispensing stations, mobile medication-dispensing carts, or other systems approved by the AHJ
   (a) Location of such units shall be permitted at the nurse station, in the clean workroom, in an alcove, or in a patient room, provided the following requirements are met:
      (i) A lockable unit shall be provided to secure controlled drugs.
      (ii) Where sharps are used, see Section 2.1-2.6.6.2 (1)(c) for requirements.
      (iii) If mobile medication-dispensing carts are used, space shall be provided in the patient room to accommodate the cart.
A1.2-3.5 Medication safety should be evaluated and documented by the SRA team so that design can support improved medication safety by identification of medication safety zones and development of design features to mitigate risk based on the nature and scope of the project.

A1.2-3.5.1 Medication safety elements. Many technologies have been developed to help reduce medication errors. This includes pharmacy order review software for validating orders, technologies such as robotics and unit dose dispensing equipment to improve accuracy of medication dispensing, and delivery technologies such as bar coding. Physical environment supports for these and other relevant technologies should be considered as part of a comprehensive approach to reduction of medication errors and adverse drug events.

A1.2-3.5.1.1 A medication safety zone, as defined in the U.S. Pharmacopeia-National Formulary (USP-NF), 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. Also see the glossary at the front of this document.

A2.1-2.6.6.1 (2) Medication safety zone design requirements
a. The physical environment requirements listed in Section 2.1-2.6.6.1 (2) are found in Chapter 1066, “Physical Environments that Promote Safe Medication Use,” of the U.S. Pharmacopeia-National Formulary (USP-NF).

b. Many technologies have been developed to help reduce medication errors. Equipment includes pharmacy order review software for validating orders for accuracy, technologies such as robotics and unit dose dispensing equipment to improve accuracy of medication dispensing, and delivery technologies such as bar coding. These and other technologies, and how the physical environment must accommodate them, should be considered as part of a comprehensive approach to reducing medication errors and adverse drug events.

c. The following surface and furnishing recommendations should be incorporated in the design of medication safety zones:
   — Surface materials should be selected to reduce glare and reflectivity.
   — Use of surface materials with sound-mitigating properties to reduce noise should be considered.
   — Built-in furnishings (where present) should be configured to provide visual and acoustic privacy, minimize visual and sound distractions and interruptions, and reduce staff fatigue through ergonomic design.

A2.1-2.6.6.1 (2)(a) Distractions and interruptions interfere with staff concentration and attentiveness to medication therapy activities.

A2.1-2.6.6.1 (2)(b) Work space organization
a. Work space organization elements should be described in the functional program to assure medication safety zones can support effective use of medication-related information and accurate performance of tasks:
   — Number of staff working in the medication safety zone
   — Key tasks being performed

b. Space needed for medication-associated equipment and safety technology should be detailed.

A2.1-2.6.6.2 (1)(e)(i) Medication safety zone sound levels. The design of medication safety zones, including consideration of noise sources in adjacent rooms, should enable a conversation sound level as described in Chapter 1066, “Physical Environments that Promote Safe Medication Use,” of the USP-NF.

A2.1-2.6.6.2 Drug and needle controls. The operational procedures associated with drug and needle controls should be described in the functional program. Such controls may require physical environment components such as electronic surveillance, password-controlled access, and view panels in doors.

A2.1-2.6.6.2 (1)(e)(ii) Placement of sharps containers. The OSHA Bloodborne Pathogens standard recommends placing sharps containers so they are accessible to personnel and as close as feasible to the immediate area where sharps are used.
11.6.6 MEDICATION SAFETY

SAFETY ZONE OPTIONS
Many ways to meet needs

STRATEGY + SELECTION
Critical to have med distribution strategy + equipment selected early in design

ADDITIONAL RESOURCES
Listed in Appendix

ACOUSTICAL PERFORMANCE
Specification guide referenced in Appendix
2.1-2.6.7 Nourishment Area or Room
Each nursing unit shall have facilities for patient nourishment. Other patient care areas shall have facilities for patient nourishment as required in facility chapters in Part 2 of the Guidelines.

2.1-2.6.7.1 Patient nourishment facilities shall be permitted to be located in either an area or a room.

2.1-2.6.7.2 The nourishment area or room shall have the following:
(1) Hand-washing station  
(2) Work counter  
(3) Refrigerator  
(4) Microwave  
(5) Storage cabinets  
(6) Space for temporary storage of unused and soiled food service implements

2.1-2.6.5 Hand-Washing Station
2.1-2.6.5.1 For location and number requirements, see facility chapters in Part 2.

2.1-2.6.5.2 Design requirements. Hand-washing stations shall meet the requirements in the following sections:
(1) For hand-washing station design details, see Section 2.1-7.2.2.8 (Architectural Details—Hand-washing stations).
(2) For hand-washing station sink requirements, see Section 2.1-8.4.3.2 (Plumbing Fixtures—Hand-washing station sinks).

Common Component Note:

- FGI distinguishes between handwashing stations and hand sanitizing stations
- Where handwashing is stated, a sink complying with chapter 2.1.
2.1-2.6.9 Clean Workroom or Clean Supply Room

The clean workroom or clean supply room shall be separate from and have no direct connection with the soiled workroom or soiled holding room.

2.1-2.6.9.1 Clean workroom. If the room is used for preparing patient care items, it shall contain the following:

(1) Work counter
(2) Hand-washing station
(3) Storage facilities for clean and sterile supplies

2.1-2.6.9.2 Clean supply room. A room used only for storage and holding as part of a system for distribution of clean and sterile supplies does not require a work counter or a hand-washing station.
**11.6.10 SOILED HOLDING**

*2.1-2.6.10 Soiled Workroom or Soiled Holding Room*

Such rooms shall be separate from and have no direct connection with either clean workrooms or clean supply rooms.

2.1-2.6.10.1 Soiled workroom. This room shall contain the following:

1. Hand-washing station
2. Flushing-rim clinical service sink with a bedpan washer
3. Work counter
4. Space for separate covered containers

2.1-2.6.10.2 Soiled holding room

1. This room shall contain the following:
   a. Hand-washing station or hand sanitation station
   b. Space for separate covered containers
2. Omission of the flushing-rim clinical service sink and work counter shall be permitted in this room when it is used only for holding soiled material.
3. If a flushing-rim clinical service sink is not provided in the soiled holding room, such a sink or an acceptable alternative (e.g., a toilet with bedpan washer located in a patient toilet room) shall be provided elsewhere on the nursing unit for cleaning of bedpans.

**APPENDIX**

**A2.1-2.6.10 Functions for soiled workroom and soiled holding room**

_Soiled workroom._ Soiled items may be handled in a soiled workroom to prepare them for subsequent cleaning, disposal, or reuse (e.g., emptying and rinsing bedpans or emesis basins, emptying or solidifying suction canisters, rinsing and gross cleaning of medical instruments). As well, this room provides temporary storage for soiled items prior to their removal from the unit.

_Soiled holding room._ This location is used exclusively for temporary storage of soiled materials and/or supplies prior to their removal from the unit.

**A2.1-2.6.11.4 Emergency equipment storage.**

Emergency equipment can be positioned in an alcove located in a corridor. Types of emergency equipment stored include cardiopulmonary resuscitation (CPR) cart(s), pumps, ventilators, patient monitoring equipment, and portable x-ray units.
2.1.2.6.11 Equipment and Supply Storage

2.1.2.6.11.1 Clean linen storage. This storage shall meet the following requirements:

(1) Clean linen shall be permitted to be stored in the clean workroom, in a separate closet, or using an approved covered cart distribution system on each floor.

(2) If a covered cart distribution system is used, storage of clean linen carts in a corridor alcove shall be permitted.

2.1.2.6.11.2 Equipment and supply storage room or alcove. A room(s) or alcove(s)—sized to provide a minimum of 10 square feet (0.93 square meter) per patient bed—shall be provided on the nursing unit floor for storage of equipment and supplies necessary for patient care.

2.1.2.6.11.3 Storage space for stretchers and wheelchairs. Storage space for stretchers and wheelchairs shall be provided.

(1) Each nursing unit shall have at least one emergency equipment storage location.

(2) Emergency equipment storage shall be provided under visual observation of staff.

(3) Emergency equipment storage locations in corridors shall not infringe on the minimum required corridor width.

(2) Equipment storage room. Each unit shall provide sufficient storage area(s) on the patient floor to keep its required corridor width free of equipment and supplies.

(a) This storage area shall be not less than 10 square feet (0.93 square meter) per postpartum room and 20 square feet (1.86 square meters) per each labor-delivery-recovery (LDR) or labor-delivery-recovery-postpartum (LDRP) room.

(b) This storage area shall be in addition to any storage in patient rooms.

A2.1.2.6.11.4 Emergency equipment storage. Emergency equipment can be positioned in an alcove located in a corridor. Types of emergency equipment stored include cardiopulmonary resuscitation (CPR) cart(s), pumps, ventilators, patient monitoring equipment, and portable x-ray units.

a. Emergency power outlets for battery charging should be provided at each emergency equipment location.

b. Needed emergency equipment storage locations and types should be identified in the functional program.

- Variety of storage options are permissible which creates design flexibility
- Some overlap within 6.11 and 6.9 for clean supplies
2.1-2.6.12 Environmental Services Room

2.1-2.6.12.1 General

(1) Application. One environmental services room shall be permitted to serve more than one nursing unit on a floor.

*2.1-2.6.12.2 Environmental services room features.
Each environmental services room shall be provided with the following:

(1) Service sink or floor-mounted mop sink
(2) Provisions for storage of supplies and housekeeping equipment
(3) Hand-washing station or hand sanitation station

A2.1-2.6.12.1 (2) Environmental services room.
Some departments or areas may need individually assigned environmental services rooms. Examples include:

— Nursing units
— Clinical areas: Pre-procedure areas, examination rooms, blood draw areas, PACUs, dialysis treatment areas, infusion areas, and other areas likely to come into contact with blood or body fluids
— Sterile areas: Operating rooms, corridors in the restricted area of the surgical suite, sterile labs, and sterile storage
— Processing rooms: Endoscopy room and instrument processing room
— Public and administrative areas: Waiting areas, offices, and hallways

A2.1-2.6.12.2 Environmental services room features

a. Environmental services rooms should be planned to accommodate carts used in the housekeeping process.
b. A storage or bin space should be included for recyclable materials: white paper, mixed paper, cans, bottles, and cardboard.

• Tells us which unit types must have dedicated room
• Engaging building support staff early in design
### 11.6.1 - 12 RECOMMENDATIONS SUMMARY

<table>
<thead>
<tr>
<th>SECTION</th>
<th>FOCUS AREA</th>
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</tr>
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<tbody>
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<td>Clean Work Room</td>
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<tr>
<td>6.11</td>
<td>Equipment - Stretcher/ Wheelchair</td>
<td>25 net SF/Stretcher</td>
<td>determine based upon industry best practices for tasks being performed</td>
</tr>
<tr>
<td>6.12</td>
<td>EVS</td>
<td>45 net SF</td>
<td>assumes 24 x 42 EVS cart storage</td>
</tr>
</tbody>
</table>