Presentation for the Minnesota Healthcare Engineering Association

MHCEA
MINNESOTA HEALTHCARE ENGINEERS ASSOCIATION

FGI and the Hospital, Outpatient and Residential Guidelines

And your presenter is…

Douglas Erickson, FASHE, CHFM

CEO, Facility Guidelines Institute

Chairman, 2010, 2014 and 2018

44 years of Health Care Experience

The views and opinions expressed in this presentation are the opinion of the speaker and may not be the official position of FGI or the Health Guidelines Revision Committee.

Today's objective is…

- Provide a basic understanding of the *Guidelines* process

Who is FGI?

Consumer Reports

We view ourselves as the *Consumer Reports* of the health care physical environment.

We have a similar view and mission…

Consumer Reports is an **expert, independent, nonprofit** organization whose mission is to work for a fair, just marketplace for all consumers and to empower consumers to protect themselves.

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Patient and staff safety is a guiding principal of the FGI *Guidelines*!

Guidelines History

- 1947: First Guidelines Published – General Standards of Construction for Hospitals
- 1985: AIA-AAH assumes responsibility for managing the revision process & publishing the document; organizes multidisciplinary consensus process.
- 2001, 2006, 2010, 2014 and 2018 Editions developed by FGI

National Committee of Experts

Who from Minnesota is involved in development of the 2022 Guidelines?

- Rebecca Lewis
- Bob Dehler
- Rick Hermans
- Karen Finneman Killinger
- Ryan Turner

FGI Participating Organizations

- ACHA
- AIA-AAH
- ASHE
- ACHE
- AHRQ
- AORN
- ASHRAE
- ACS
- CHD
- NIH
- CDC
- TJC
- CMS

2022 HGRC
130+ Multidisciplinary Committee

20% - Architects
18% - Medical professionals
16% - State AHJs
13% - Engineers
10% - HC administrators/HC org. reps
8% - Federal AHJs (IHS, CMS, HUD, VA)
7% - Infection control experts + NIH/CDC
4% - Construction professionals
4% - Interior designers

FGI Process Overview

Consensus-based process for *Guidelines* development using:

- Collective multidisciplinary experience
- Professional stakeholder consensus, including many AHJs (*no manufacturers vote on proposals*)
- Public review process
- Clinical and evidence-based research
- Continual improvement process

Every new edition of the FGI *Guidelines* is different and an "evolution" from previous editions.

Driving Principles

- Minimum/Baseline/Fundamental
- Where possible – advised by evidence
- Addresses national patient safety goals
- Written to be adopted as a standard
- No duplication of other standards
- Manufacturers cannot be members of the Health Guidelines Revision Committee
- Evaluated by a Benefit/Cost Committee

Defining differences of the *Guidelines*!

Functional Program

- Owner driven
- Critical thinking and outcome driven
- Provision of executive summary
- Used by health care organization; updated accordingly
- Informs the physical space program
- Used by AHJ to evaluate design documents

Acoustic Requirements

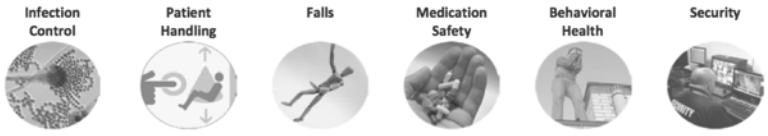
"Unnecessary noise is the cruelest absence of care"
Florence Nightingale

The Six Key Topics

1. Site Exterior Noise
2. Acoustical Finishes and Details
3. Room Noise Levels
4. Sound Isolation & Speech Privacy
5. Electro-acoustics—Alarms, Sound Masking
6. Vibration

Elements of the SRA

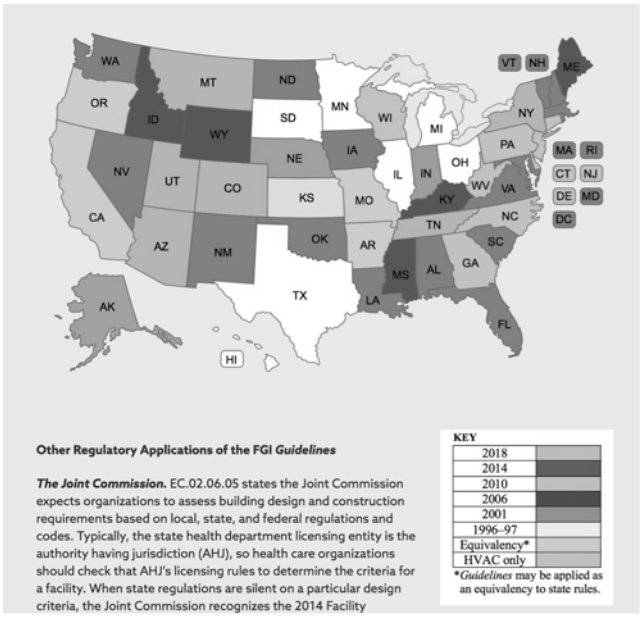
- Falls (including noise causing poor sleep)
- Medication errors (noise and distraction)
- Behavioral health (noise reduction impact)
- Hospital-acquired infections
- Security
- Patient handling and movement
- Patient immobility (hospital only)



2018 *Guidelines*

- Split the standard into two parts:
  - Fundamental requirements – Minimum/baseline standards that can be adopted as code by AHJs.
  - Beyond Fundamentals – Emerging and/or best practices that exceed basic requirements
- Focus on primary care/outpatient facilities as the trend in health care delivery is continuing to move in that direction

What States use the *Guidelines* and what edition have they adopted?



State Adoption of 2018 *Guidelines*

Currently referencing 2018

- Georgia
- North Carolina
- West Virginia
- Pennsylvania
- New Jersey
- New Mexico
- Connecticut
- Delaware
- District of Columbia
- Iowa

Adopting 2018 in 2019

- Florida
- Oregon
- Nebraska
- Michigan
- Nevada
- Washington
- Indiana
- Tennessee
- New York
- Massachusetts

FGI website: a way to keep current with FGI and *Guidelines* activities

FGI Resources

Errata

Errata for the 2018 *Guidelines for Design and Construction of Hospitals*

Content Corrections

PAGE	SECTION	ERROR	CORRECTED TEXT
53	Table 1.2-6	[4]In cases where greater speech privacy is required between patient ~~care~~ rooms when both room doors.... [5]This is the performance required...	[4]This is the performance required [5]In cases where greater speech privacy is required between patient rooms when both patient patient room doors...
67	2.1-1	**2.1-1 General** ...	**2.1-1 General** ... 2.1-1.1.4 Outpatient projects located in hospitals shall meet the requirements of the FGI *Guidelines for Design and Construction of Outpatient Facilities.*
132	Table 2.1-2 Nurse Call Devices	**Procedure room/Class 2 imaging room** *Required stations:* ~~Bath,~~ Staff assistance *Optional station:* ~~Emergency call~~ **Operating room/Class 3 imaging room** *Required stations:* ~~Bath,~~ Staff assistance **Electroconvulsive therapy treatment room/pre-procedure and recovery patient care stations** *Required stations:* ~~Bath,~~ Staff assistance	**Procedure room/Class 2 imaging room** *Required stations:* Staff assistance, Emergency call *Optional station:* Nurse master **Operating room/Class 3 imaging room** *Required stations:* Staff assistance, Emergency call **Electroconvulsive therapy treatment room/pre-procedure and recovery patient care stations** *Required stations:* Staff assistance, Emergency call
133	Table 2.1-3 Station Outlets	**Class 1 imaging room** 1 oxygen, 1 vacuum, ~~1 medical air~~ **Operating room/Class 3 imaging room** 2 oxygen, 5 vacuum, 1 medical air, 1 WAGD, ~~1 instrument air~~	**Class 1 imaging room** 1 oxygen, 1 vacuum **Operating room/Class 3 imaging room** 2 oxygen, 5 vacuum, 1 medical air, 1 WAGD
152	2.2-2.8.2	**2.2-2.8.2 NICU Rooms and Areas** ...	**2.2-2.8.2 NICU Rooms and Areas** ... **2.2-2.8.2.6 Reserved** **2.2-2.8.2.7 Nurse call system.** A nurse call system shall be provided in accordance with Section 2.1-8.5.1 (Call Systems).

continued

FGI Bulletin

FGI Bulletin #7

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May 16, 2018 | Category **FGI BULLETIN**

Errata Sheets Posted for 2018 Hospital and Outpatient *Guidelines*

The errata sheets prepared for all *Guidelines* editions are crucial to users of the documents. An errata sheet presents items that are errors in the published books, whether editorial oversights or discrepancies that were revealed after publication. The corrections shown in the errata sheets are considered part of the official documents and should be applied as part of the standards by all users, including authorities having jurisdiction.

Dated errata sheets are posted on the FGI website, and we recommend checking back periodically to make sure you have the most current version. We also will continue to let subscribers to the *FGI Bulletin* know when new errata sheets are posted. For the 2018 digital documents available on MADCAD, the goal is to identify corrections in the online version of the documents.

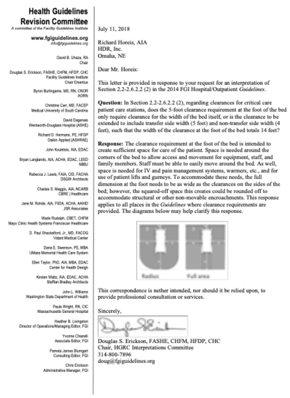
We appreciate hearing from *Guidelines* users who have questions about the content they use. This is often how errors are found. Write to us at info@fgiguidelines.org.

State Adoption Focus: Colorado

The State of Colorado recently adopted Chapter 4.1, Specific Requirements for Assisted Living Facilities, in the 2018 *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities*. Adoption of the assisted living facility standards includes applicable cross-references found in the chapter. Exceptions to the *Guidelines* requirements are parking and elevator standards, which defer to local regulations.

For assisted living residences applying for a new license, application of

FGI Interpretations



Health Guidelines Revision Committee

July 11, 2018

Richard Horeis, AIA
HDR, Inc.
Omaha, NE

Dear Mr. Horeis:

This letter is provided in response to your request for an interpretation of Section 2.2-2.6.2.2 (2) in the 2014 FGI Hospital/Outpatient *Guidelines*.

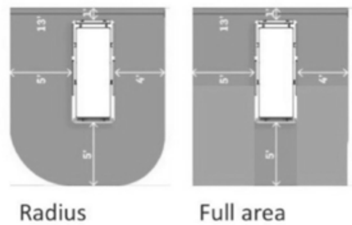
Question: In Section 2.2-2.6.2.2 (2), regarding clearances for critical care patient care stations, does the 5-foot clearance requirement at the foot of the bed only require clearance for the width of the bed itself, or is the clearance to be extended to include transfer side width (5 feet) and non-transfer side width (4 feet), such that the width of the clearance at the foot of the bed totals 14 feet?

Response: The clearance requirement at the foot of the bed is intended to create sufficient space for care of the patient. Space is needed around the corners of the bed to allow access and movement for equipment, staff, and family members. Staff must be able to easily move around the bed. As well, space is needed for IV and pain management systems, warmers, etc., and for use of patient lifts and gurneys. To accommodate these needs, the full dimension at the foot needs to be as wide as the clearances on the sides of the bed; however, the squared-off space this creates could be rounded off to accommodate structural or other non-movable encroachments. This response applies to all places in the *Guidelines* where clearance requirements are provided. The diagrams below may help clarify this response.

This correspondence is nether intended, nor should it be relied upon, to provide professional consultation or services.

Sincerely,

Douglas S. Erickson, FASHE, CHFM, HFDP, CHC
Chair, HGRC Interpretations Committee
314-800-7896
doug@fgiguidelines.org



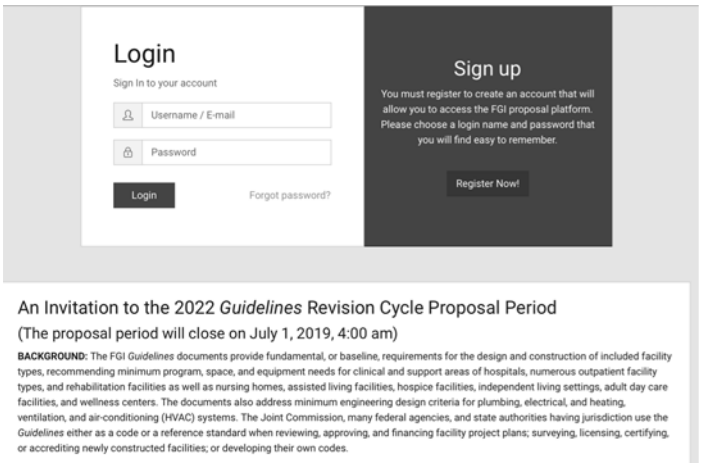
FGI Policy Statement Invasive vs Noninvasive

FGI Advisory Opinion

Applying the FGI Guidelines to Spaces Where Invasive vs. Noninvasive Patient Care is Delivered

www.fgiguidelines.org

Be a part of the *Guidelines* success – get involved!



2018 *Guidelines*

An overview of major topics that were addressed and changes in the 2018 *Guidelines*.

2018 Hospital and Outpatient Guidelines Major Topics Addressed

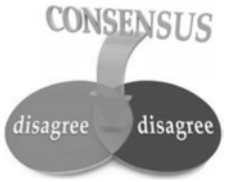
- Design of Telemedicine Services
- Emergency preparedness
- Design/clearances to accommodate patients of size
- Pre- and post-procedure patient care areas – flexibility to combine areas and correct ratios
- Procedure and operating room sizes that reflect space requirements for anesthesia team and equipment
- Classification system for imaging rooms

2018 Hospital and Outpatient Guidelines Major Topics Addressed

- Guidance for when exam/treatment, procedure, and operating rooms are needed
  - Clearances and spatial relationships
  - Locations for procedure types
- Mobile/transportable medical unit revisions

2018 Hospital Guidelines Other Notable Changes

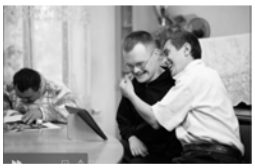
- Single-bed CCU rooms
- Sexual assault forensic exam room
- Geriatric treatment room in ED
- Technology distribution room size



2018 Residential *Guidelines* Major Topics Being Addressed

- Updated acoustic and lighting requirements
- Grab bar configurations
- New chapter on facilities for individuals with intellectual and/or developmental disabilities
- New chapter on long-term residential substance abuse treatment facilities





Ventilation Standards
They are a mess…here are the organizations with something to say about compliance.

AAMI – Advancing Safety in Healthcare Technology
ASHE – American Society for Healthcare Engineering, a personal membership group of the American Hospital Association
The Joint Commission
AORN
ASHRAE
CMS – Centers for Medicare & Medicaid Services
APIC – Association for Professionals in Infection Control and Epidemiology
FGI

ASHRAE 170 and the Outpatient Guidelines

Hospital and Outpatient ventilation requirements

This section is a reprint of the 2017 ASHRAE Standard 170. FGI and ASHRAE have a partnership to work on the content together and to publish Standard 170 as a part of the *Guidelines*.

ASHRAE 170 and the Outpatient Guidelines

- Ambulatory surgery and and endoscopy facilities shall comply with all of ASHRAE 170
- The following facility types only have to meet ventilation requirements for the spaces listed in ASHRAE 170, other spaces not listed do not have to comply with ASHRAE 170:
  - Imaging facilities with Class 2 and 3 imaging rooms
  - Infusion facilities
  - Dialysis facilities

ASHRAE 170 and the Outpatient Guidelines

- The following facility types do not have to comply with ASHRAE 170 but should follow local mechanical codes:
  - General and specialty medical services
  - Urgent care
  - Imaging facilities with Class 1 imaging rooms
  - Outpatient psychiatric facilities
  - Outpatient rehabilitation facilities
  - Dental facilities
  - Birth centers

ASHRAE 170

- Initial committee meetings in 2002
- First standard issued in 2008
- Updated through a continuous maintenance process
- New edition published every 4 years
- FGI and ASHRAE try to keep in sync with each other
- Included in the *Hospital and Outpatient Guidelines*

Continuous Maintenance Process

Under continuous maintenance procedures anyone may propose changes at any time. Each change will be considered by the appropriate Standing Standard Project Committee (SSPC) or Standing Guideline Project Committee (SGPC), according to a definite schedule, shown in Clause 2. The project committees may also propose changes

ASHRAE 170 – (2008 – 2013)

- Patient room total air changes per hour reduced from 6 to 4
- Endoscopy procedure room pressure relationship changed to no requirement
- Added language on fully ducted return or exhaust air systems
  - Any location where pressure relationship must be maintained
  - Recovery rooms, critical and intensive care areas, intermediate care areas, burn units
  - Patient care areas of inpatient facilities
- OR air change rate setback
- Switchable pressure systems are not permitted

ASHRAE 170 – (2013 – 2017)

- Exam room air changes per hour – reducing from 6 – 4
- Clarification of outpatient occupancy requirements
- OR classification
- Clarification of “recirculating room HVAC units”
- OR air distribution – primary diffuser array requirements
- Residential health care requirements
- Coordination of central sterile ventilation and OR humidity requirements with AAMI

Now onto our old "friend"…

CMS Regulation for Ventilation

§482.41(c)(4) - There must be proper ventilation, light, and temperature controls in pharmaceutical, food preparation, and other appropriate areas.

- Interpretive Guidelines §482.41(c)(4)

> Temperature, humidity and airflow in the operating rooms must be maintained within acceptable standards to inhibit bacterial growth and prevent infection, and promote patient comfort. Excessive humidity in the operating room is conducive to bacterial growth and compromises the integrity of wrapped sterile instruments and supplies. Each operating room should have separate temperature control. Acceptable standards such as from the Association of Operating Room Nurses (AORN) or the American Institute of Architects (AIA) should be incorporated into hospital policy.

CMS Regulation for Ventilation

§482.41(c)(4) - There must be proper ventilation, light, and temperature controls in pharmaceutical, food preparation, and other appropriate areas.

Survey Procedures §482.41(c)(4)

- Verify that the hospital is in compliance with ventilation requirements for patients with contagious airborne diseases, such as tuberculosis, patients receiving treatments with hazardous chemical, surgical areas, and other areas where hazardous materials are stored.
- Verify that each operating room has temperature and humidity control mechanisms.
- Review temperature and humidity tracking log(s) to ensure that appropriate temperature and humidity levels are maintained.

All bad roads lead to CMS…

The Main Issue: If you design to current Standard 170 requirements, CMS may require you to comply with the 2008 edition, without amendments, anyway. This is a potential problem when requirements of the 2008 edition have been relaxed or reduced by amendments to either the 2008 or 2013 edition. This is also a potential issue with states that have not adopted the current edition or addenda.

CMS referencing 2012 NFPA 99

Chapter 9 Heating, Ventilation, and Air Conditioning (HVAC)

Chapter 9 was added by a tentative interim amendment (TIA). See page 1.

9.1 Applicability.

9.1.1 This chapter shall apply to construction of new health care facilities, except as noted in 9.1.2 and 9.1.3.

9.1.2 This chapter shall also apply to the altered, renovated, or modernized portions of existing systems or individual components.

9.1.3 Existing construction or equipment shall be permitted to be continued in use when such use does not constitute a distinct hazard to life.

2.3.2 AHSRAE Publications. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1791 Tullie Circle, NE, Atlanta, GA 30329-2305

ASHRAE 170, *Ventilation of Health Care Facilities*, 2008.

ASHRAE 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings*, 2010.

ASHRAE Guideline 0, *The Commissioning Process*, 2005.

ASHRAE Guideline 1.1, *HVAC&R Technical Requirements for The Commissioning Process*, 2007.

CMS Application of ASHRAE 170

Addendum a – 2008

- CMS could require 70°F - 75°F temperature range vs. 72°F to 78°F
- While the addition of the word “patient” in front of “corridor” in Table 7.1 was intended to clarify that non-patient corridors do not need to meet these requirements, CMS could potentially apply these requirements to all corridors.

Addendum b – 2008

- CMS could preclude the use of recirculating room HVAC units in laboratories (no chilled beams)
- CMS could require positive pressure in endoscopy, ICU and Burn Unit rooms vs. no requirement
- CMS could require 15 ACH of Total air vs. 6 in an endoscopy procedure room

CMS Application of ASHRAE 170

Addendum w – 2008

Gastrointestinal Endoscopy Procedure Room

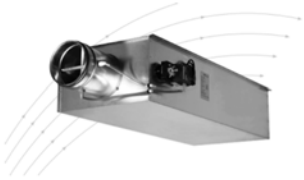
- Positive pressure
- Reduces minimum Relative Humidity to 20%
- Requires space to be treated as Bronchoscopy if both procedures will be performed in the same space
- Changes differential pressure from Positive to No Requirement (N/R)
- CMS may not allow endoscopy and bronchoscopy procedures to be performed in the same room

CMS Application of ASHRAE 170

<u>Ducted Return Air Systems</u>

In addition to spaces listed in Table 7.1 that have differential pressure requirements, these spaces also must be served by ducted return air systems:

- Recovery Rooms
- Critical and Intensive Care
- Intermediate Care
- Burn Unit



Questions?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Residential Health, Care, and Support Facilities
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