Presentation for the Minnesota Healthcare Engineering 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.
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.
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

Copyright FGI 2014
FGI website: a way to keep current with FGI and Guidelines activities
Errata

Errata for the 2018 Guidelines for Design and Construction of Hospitals

<table>
<thead>
<tr>
<th>Corrected</th>
<th>Original</th>
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<td>Table 2.5</td>
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FGI Bulletin

FGI Bulletin #7

State Adoption Focus: Colorado

The State of Colorado recently adopted Chapter 5, Specific Requirements for Assisted Living Facilities, in the 2018 Guidelines for Design and Construction of Health Care, Congregate, and Support Facilities. Adoption of the updated Facility Standards is to include applicable cross references found in the chapter. Exceptions to the Guidelines requirements are packing and elevator standards, which defer to local regulations.
FGI Interpretations

FGI Policy Statement Invasive vs Noninvasive
Be a part of the **Guidelines** success – get involved!

An Invitation to the 2022 Guidelines Revision Cycle Proposal Period
(Proposal period will close on July 1, 2019, 4:00 am)

**BACKGROUND:** The HDO guideline documents provide fundamental, or baseline, requirements for the design and construction of included facility types, recommending minimum programs, space, and equipment needs for clinical and supportive areas of hospitals, numerous senior facility types, and rehabilitation facilities as well as nursing homes, assisted living facilities, hospice facilities, independent living settings, adult day care facilities, and wellness centers. The documents also address minimum engineering design criteria for plumbing, electrical, and heating, ventilation, and air-conditioning (HVAC) systems. The Joint Commission, many federal agencies, and state authorities having jurisdiction use the Guidelines either as a code or a reference standard when reviewing, approving, and financing facility project plans, surveying, licensing, certifying, or certifying newly constructed facilities or developing their own codes.

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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.

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 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.

- 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


- 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 ASHRAE Publications. American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc., 1791 Table Circle, NE, Atlanta, GA 30328-0245.

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

Ducted Return Air Systems
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?