The State of Minnesota and the FGI

Bob Dehler, P.E., Engineering Program Manager
MHCEA, 2019
The State of Minnesota and the FGI
• State of Minnesota and the FGI
  • What we have seen in proposals in the past
  • Common questions
• What is the FGI?
• An architects perspective on the FGI
Where Are We Now?

- Started discussing adopting the FGI in 2016
- Currently enforce 1955 hospital rules
- Just follow rules, you are building a new 1955 hospital
- Most hospitals, designers and accrediting organizations use FGI
- Not a big move for the state. Moving our requirements to what is already being done
- We are not getting more staff so plan reviews will not be much different when the FGI is adopted
- Do not design to the baseline. Design to patient need and safety then check to baseline standards
Previous Proposals at Legislature

• Hospitals shall meet the applicable provisions of the most current edition of the Facility Guidelines Institute (FGI) ‘Guidelines for Design and Construction of Hospitals’
  • Evergreen clause
  • Keeps current, not 65 years old
Previous Proposals at Legislature

• The Department of Health shall determine the date of mandatory usage of the newest published edition of the Guidelines
  • 3 months, 6 months?
• Where the FGI and federal requirements directly conflict, the federal requirements shall apply
  • Think sprinklers in elevator shafts
  • This would remove the requirement for waivers when there is a direct conflict
  • Saves your time to write the request and engineering to write the waiver
• Minnesota Rules 4640.1500 – 4640.6400 and 4645.0200 – 4645.5200 shall be repealed

• Because we are adopting new construction standards, we would repeal the old rules that described the physical environment requirements for hospitals
The existing waiver provision was in statute. MDH will create a FGI ‘Waiver Form’ to make the process easier and to allow innovation.

- Discussed at plan review
- Signed by administrator
Wait a minute, what about...?

- I thought the FGI are created as guidelines and not to be a code requirement
  - AHJ’s are part of FGI
  - FGI written as enforceable code
• We cannot afford to remodel our hospital every 4 years when new editions of the FGI are published
  • Only for new construction
Wait a minute, what about...?

• We are fine without them. Why add another code set to enforce in Minnesota? We do not need another code
  • Already used by owners and designers
  • Replaces rules
There are things in the FGI that I do not agree with and if we adopt the FGI as a state, then we will be stuck with that

- Waiver
- Be part of the change, participate in the FGI revision process
Thank you.

Bob Dehler, Engineering Program Manager
robert.dehler@state.mn.us, 651-201-3710
Presentation for the Minnesota Healthcare Engineering Association
FGI and the Hospital, Outpatient and Residential Guidelines
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.

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

The keystone to health care planning, design, and construction
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?
Other Regulatory Applications of the FGI Guidelines

Centers for Medicare and Medicaid Services. CMS has adopted by regulation the 2012 editions of the National Fire Protection Association (NFPA) 101: Life Safety Code and NFPA 99: Health Care Facilities Code. Otherwise, CMS regulation 482.41 requires hospitals to be constructed, arranged, and maintained to ensure the safety of the patient and to provide facilities for diagnosis and treatment of patients. CMS requires facilities to be in compliance with the appropriate code edition.

KEY

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<th>Year</th>
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<tr>
<td>2018</td>
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<td>2001</td>
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<td>1996–97</td>
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*Guidelines may be applied as an equivalency to state rules.

The keystone to health care planning, design, and construction
MINNESOTA sets forth its own design and construction hospital rules in the state administrative code, which requires all construction to be in strict compliance with all applicable state and local codes, ordinances, and rules not in conflict with the provisions in the administrative code rules. The state licensure rules were written and promulgated in the 1950s, but the Minnesota Department of Health generally uses the current edition of the FGI Guidelines as guidance for plan reviews for hospital projects. (5/22/18)

Other Regulatory Applications of the FGI Guidelines

Centers for Medicare and Medicaid Services. CMS has adopted by regulation the 2012 editions of the National Fire Protection Association (NFPA) 101: Life Safety Code and NFPA 99: Health Care Facilities Code. Otherwise, CMS regulation 482.41 requires hospitals to be constructed, arranged, and maintained to ensure the safety of the patient, and to provide facilities for diagnosis and treatment and for special hospital services appropriate to the needs of the community. To achieve this, CMS requires facilities to be in accordance with acceptable standards of practice, but leaves it up to the health care organization to determine which design standard to utilize.
State Adoption of 2018 Guidelines

Currently referencing 2018

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

Adopting 2018 in 2019

- Florida
- Oregon
- Nebraska
- Michigan
- Nevada
- Washington
- Indiana
- New York
FGI website: a way to keep current with FGI and Guidelines activities
FGI Resources

The keystone to health care planning, design, and construction
# Errata

Errata for the 2018 Guidelines for Design and Construction of Hospitals

## Content Corrections

<table>
<thead>
<tr>
<th>PAGE</th>
<th>SECTION</th>
<th>ERROR</th>
<th>CORRECTED TEXT</th>
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</thead>
</table>
| 53   | Table 1.2-6 | *In cases where greater speech privacy is required between patient care rooms when both room doors...*  
*This is the performance required...* | *This is the performance required...*  
*In cases where greater speech privacy is required between patient rooms when both patient room doors...* |
| 67   | 2.1-1   | 2.1-1 General  
*...* | 2.1-1 General  
*...*  
*2.1-1.4 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: Both, Staff assistance  
Optional station: Emergency call*  
*Operating room/Class 3 Imaging room  
*Required stations: Both, Staff assistance  
Electroconvulsive therapy treatment room/pre-procedure and recovery patient care stations  
*Required stations: Both, 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  | 2.2-8.2 | 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*
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@fgiguide.github.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
Dear Mr. Harvey:

This letter is provided in response to your request for an interpretation of Section 2.2.5.2.2.2 (1) in the 2014 FGI Hospital/Outpatient Guidelines.

**Question:** In Section 2.2.5.2.2.2 (1), regarding clearances for critical care patient care stations, does the 4-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 (if feet) and non-transfer side width (6 feet), such that the width of the clearance at the foot of the bed is 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, monitors, 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 shape of the corner creates a dedicated off to accommodate structural or other non-intrusive 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 neither intended, nor should it be relied upon, to provide professional consultation or services.

Sincerely,

[Signature]

Douglas S. Dickson, FACH, CHFM, HFDP, CHC
Chair, HGRC Interpretations Committee

July 11, 2018

Richard Horvitz, AIA
HDR, Inc.
Omaha, NE
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
(The proposal period will close on July 1, 2019, 4:00 am)

**BACKGROUND:** The FGI *Guidelines* documents provide fundamental, or baseline, requirements for the design and construction of included facility types, recommending minimum program, space, and equipment needs for clinical and support areas of hospitals, numerous outpatient 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 accrediting newly constructed facilities; or developing their own codes.

The keystone to health care planning, design, and construction
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 Guidelines Other Notable Changes

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

Rebecca Lewis, FACHA, FAIA, CID
Principal, Director of Healthcare Design
DSGW Architects
FGI Disclaimer

*The views and opinions expressed in this presentation are the opinion of the speaker and not the official position of the HGRC or FGI.*
Agenda

1. General overview of medical construction (U.S., Minnesota and
2. Rural healthcare challenges
3. How does the Guidelines support rural healthcare?
4. An architect’s perspective of the Guidelines
An architect’s perspective on the *Facilities Guidelines Institute*

- AIA commitment
- Opportunity to be involved in the process
- Minnesota – the best healthcare we can
- Level playing field
- Consistent standards
- Beyond Fundamental resources
Facilities projects

Facilities Projects by type of hospital

<table>
<thead>
<tr>
<th>Type of Hospital</th>
<th>Currently under construction</th>
<th>Planned in the next 3 years</th>
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</thead>
<tbody>
<tr>
<td>ACUTE CARE</td>
<td>23%</td>
<td>22%</td>
</tr>
<tr>
<td>SPECIALTY</td>
<td>7%</td>
<td>9%</td>
</tr>
<tr>
<td>CRITICAL ACCESS</td>
<td>4%</td>
<td>5%</td>
</tr>
</tbody>
</table>

Health Facilities Management / ASHE 2019 Hospital Construction Survey
Facilities projects

Specialty hospital construction projects

- Behavioral health center / psychiatric hospital: 55%
- Cancer treatment hospital: 20%
- Children's hospital: 20%
- Women's hospital: 16%
- Heart hospital: 12%
- Orthopedic hospital: 12%
- Rehabilitation hospital: 9%

*Health Facilities Management / ASHE 2019 Hospital Construction Survey*
Average hospital construction cost per square foot

$365-450/sq. ft  Hospital new construction / renovation

$200-300/sq. ft  Clinic new construction / renovation

DSGW Architects Data

MCHEA 2019
The Minnesota Story

• In 2016, health care providers committed $645.4 million to major projects.

• While most commitments were less than $5 million, half of all spending was over $20 million and nearly one quarter (of the 20 million) was devoted to 12 projects over $100 million from 2007 to 2016.

• Hospitals are the leading source of health care capital expenditures in Minnesota comprising 72% of all spending between 2007 and 2016.

• Nearly two-thirds of health care capital spending is devoted to building and space.

Rural Healthcare challenges

• Geographic isolation making access to care very difficult
• Income level disparities and the inability to afford care

(MDH Public Health Data)
Rural Healthcare Challenges

• A small labor pool affecting recruitment efforts
• Lack of patient transportation
Rural Healthcare Challenges

- **Service disparity** or difficulty finding specialists to provide services
- Difficulty accomplishing integrated health care

The hospital study shows about 1,350 primary care doctors are expected to leave the profession in the next decade from the approximately 5,000 in Minnesota today. At the same time, 1,300 doctors are expected to begin practice. Combined with increased demand, that would leave an 850-doctor shortfall, the study shows.

“Minnesota doctors may be in short supply” - Don Davis, Jul 22, 2014
• Minnesota is 20-30% rural
There are 144 hospitals in Minnesota, 78 are Critical Access Hospitals (54%)
The Minnesota Story

Location of Minnesota Health Care Capital Expenditures by Project Size, 2007 to 2016

The volume of spending is dependent on the location of major health care providers.

Major Spending Commitment
- $1,000,000 - $7,600,000
- $7,700,000 - $22,300,000
- $23,300,000 - $60,500,000
- $72,300,000 - $134,000,000
- $170,000,000 - $281,800,000

Rural and Urban Commuting Areas
- Urban Area
- Large Rural City
- Small Rural Town
- Isolated Rural Town

The Minnesota Story

Distribution of Minnesota Health Care Capital Expenditures in Urban and Rural Areas, 2007 to 2016

Urban Areas had 82% of state health care capital expenditures and 74% of the state population

Urban Areas also had 79% of available hospital beds

Rural Healthcare challenges

• A lack of consistent technology
• Higher construction costs and limited resources available locally
Service Availability: Minnesota

Service Availability vs. National Average

Population with availability

- DSL
- Cable Broadband
- Fiber Internet
- Fixed Wireless
- Mobile Wireless
- 2+ Providers
- 50+ Mbps Download
- 10+ Mbps Upload
- Gigabit download
- Gigabit upload

Population with availability

- Minnesota
- National Average

Minnesota Services Coverage Map, GEOISP.com
Minnesota construction cost comparison

• Hospital construction and renovation:
$365.00 - $450.00 sf

• Clinic construction and renovation:
$200.00 - $300.00 sf

Location Factors (R.S. Means 2018)

• City:
  - MSP – x 1.06 (#1)
  - Rochester – x 1.00
  - Duluth – x 1.01
  - Mankato – x .97
  - Thief River Falls – x .93 (#2)

• Example:
  1. $365.00 (1.06) = $387.00
  2. $365.00 (.93) = $340.00
Construction cost comparison continued:

But:

R.S. Means is a *construction cost* estimating tool.

• Rural *project costs* may be impacted by:
  • Project road and utility construction
  • Extensive phasing as there may be no temporary facilities nearby
  • Travel for qualified contractors
  • Labor shortages
  • Housing limitations for contractors and laborers
  • Limited travel and access for materials
How does the *Guidelines* support rural health care?

• The Critical Access Hospital chapter
• The Rural Health Topic Group 2022
• Free Standing Emergency Facility Chapter
• HGRC membership (8 members from Minnesota)
  • 1 state AHJ, 3 architects, 2 engineers, 1 planner/interior designer, 1 facility project manager

• *The constant debate!*
Design

What does the Guidelines do to support innovation?

- Provide a level playing field
- Three – four year editing process
- Public engagement
- Base minimum document
- Beyond Fundamentals
- Benefit Cost analysis
- Interpretation process
Regulations

• Universal regulatory language
• Supportive Appendix language
• Errata and interpretations are constant
• HGRC representation by AHJ’s
  • *Minnesota? Not just a recommendation.*
Thank you!

Questions?

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