

FGI perspective & invitation

Acoustic comfort in health care facilities: Perspective of the Facility Guidelines Institute

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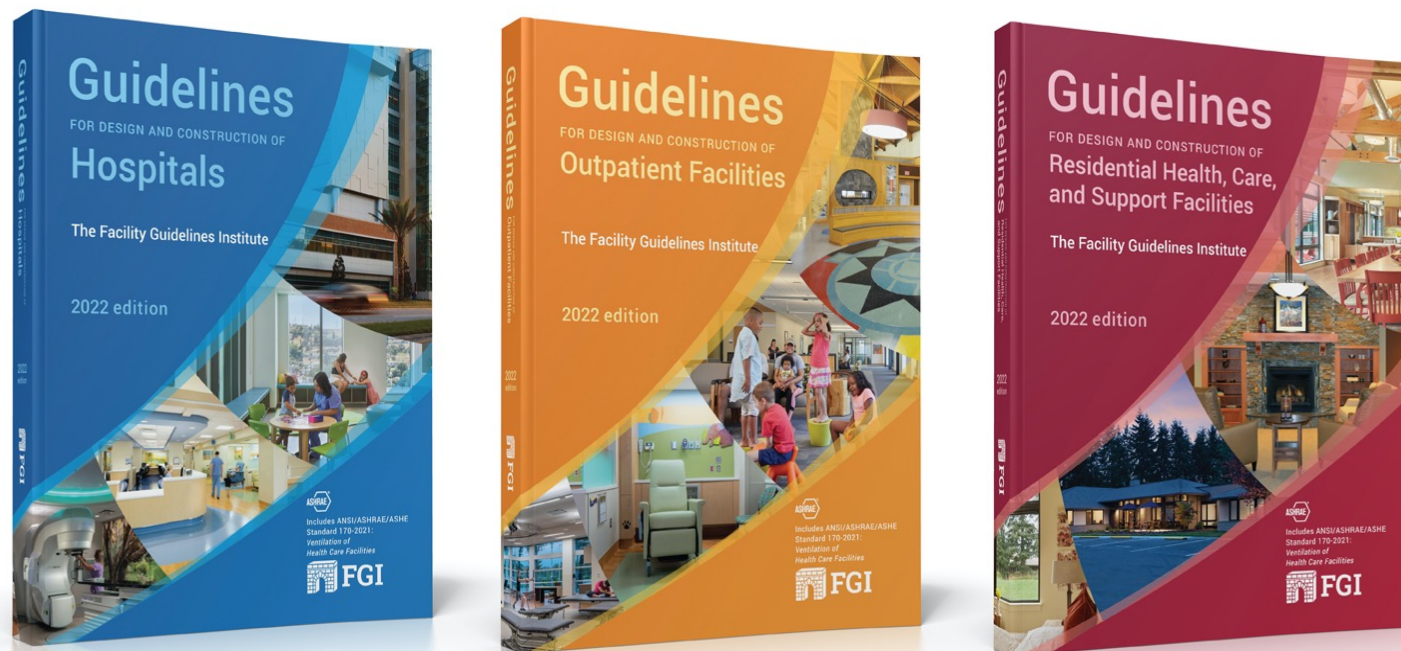
Thank you!

- We appreciate the invitation to present today
- We look forward to hearing your views
- We invite you to:
 - Review the **new** FGI 2022 *Guidelines* (first new edition since 2018).
 - Participate in the **next** (2026) edition.
 - Planning has already begun.

About the presenters

- **Kurt Rockstroh FAIA, FACHA**
FGI board member, President 2012 to 2017, active in FGI since its inception in 1998, board representative to acoustics committee since its formation in 2005
- **Mandy Kachur PE, INCE.Bd.Cert., F/INCE-USA**
vice chair of FGI's acoustics committee since 2014;
delegate to FGI's residential care committee;
active in FGI's acoustics committee since 2006;
co-owner of Soundscape Engineering

FGI's New 2022 *Guidelines*



➔ **Published May 2022.** Three volumes, 1,066 pages, available from **FGI** as electronic or printed documents

FGI's mission is...



- “To establish and promote consensus-based guidelines and publications, advised by research, to advance quality health care.”
- ***We're here to hear from you!***

Background & authority

- Authorized by President Truman's 1946 Hill-Burton Act (first step toward Medicare); privatized in 1984
- FGI sets standards for health care facilities in 44 states and serves as a reference standard for 6 states
- The reference standard for LEED HC, IgCC + 87 countries
- FGI has been a 501(c)3 nonprofit since 1998
- *Health care is one of America's largest, richest, most technologically advanced, research-intensive, and fastest growing industries – 20% of U.S. GDP*

FGI's Methodology

- FGI's *four-year update process* yields quadrennial “minimum requirements” enforced by state/regional authorities having jurisdiction (AHJs)
- CIP (continuous improvement process) is a widely respected set of management methodologies (Deming) that encourage continual improvement, adaptation, and change
- See: <https://asana.com/resources/process-improvement-methodologies>

What's a "minimum requirement"?

- *Primum non nocere* – the Hippocratic injunction
- **First, do no harm**
- NOT equivalent to “best practices” or “consensus standards” or “recommendations”
- **REALITY:** must be accepted by state legislatures and AHJs (state regulatory authorities)
- *Authoritative, conflict of interest (COI)-free evidence is essential*

What's an "AHJ"?

- **"Authority Having Jurisdiction (AHJ)** - an organization, office, or individual responsible for enforcing the minimum requirements of codes, standards, and permits for approving equipment, materials, and installations or a procedure within its jurisdiction"
- FGI includes 30 AHJs on its committees to ensure regulatory points of view are represented
- See:
<https://www.facilitiesnet.com/firesafety/article/Authority-Having-Jurisdiction-AHJ-Plays-Crucial-Role-in-Fire-Alarm-Upgrades--16594>

What's "valid evidence"

- Valid evidence is essential for FGI to assess proposals. "Valid evidence" means:
 - Independent, institutionally based, funded, third-party, peer-reviewed research conducted by relevant multidisciplinary teams (e.g., doctors + engineers)
 - Demonstrably free of conflicts of interest
 - Must demonstrate impact on health AND economic outcomes
 - Generally includes cost-benefit analysis

Three examples...

- For the past 16 years, FGI's acoustics committee has organized over a dozen research projects. Here are three examples (2nd and 3rd were organized and seed-funded by the acoustics committee & FGI):
 - Johns Hopkins Meta-analysis (2006, Busch-Vishniac & West et al.) – *an important benchmark!*
 - Harvard Sleep Study (2011, Buxton, Ellenbogen, Carballeira, Solet et al.)
 - Rothschild-FGI Acoustics in Residential Care (2016, Kachur, et al. [unpublished])

FGI's acoustics committee

- Officially known at FGI as the APRC (Acoustics Proposal Review Committee) – web address is “Quiet Healthcare”
- **Formed in 2005** – 16 years of continuous, independent operation with changing membership
- **Developed acoustic content for five editions** of the FGI *Guidelines* + the Springer book “Sound & Vibration 2.0” (2010)
- Composed of 15 leaders in acoustics and related disciplines
- Core group represents ASA's AA, NS, and PP divisions



Acoustics and FGI

Submit Proposals to FGI

- Continuous improvement to the FGI *Guidelines* occurs through **proposals** submitted by the public and FGI committees during the revision cycle.
 1. Public proposal period (spring 2023)
 - Support with research
 - Authoring tips at the FGI website
 2. Public comment period
 - Opportunity to comment on changes shown in the draft document

- Proposals and comments on acoustics are reviewed by the Acoustics Proposal Review Committee.
 - Recommendations made to the Health Guidelines Revision Committee (HGRC), who make the final decision.

Considerations for proposals

For example, to assess proposals regarding acoustic comfort or other health care topics, FGI seeks answers to these questions:

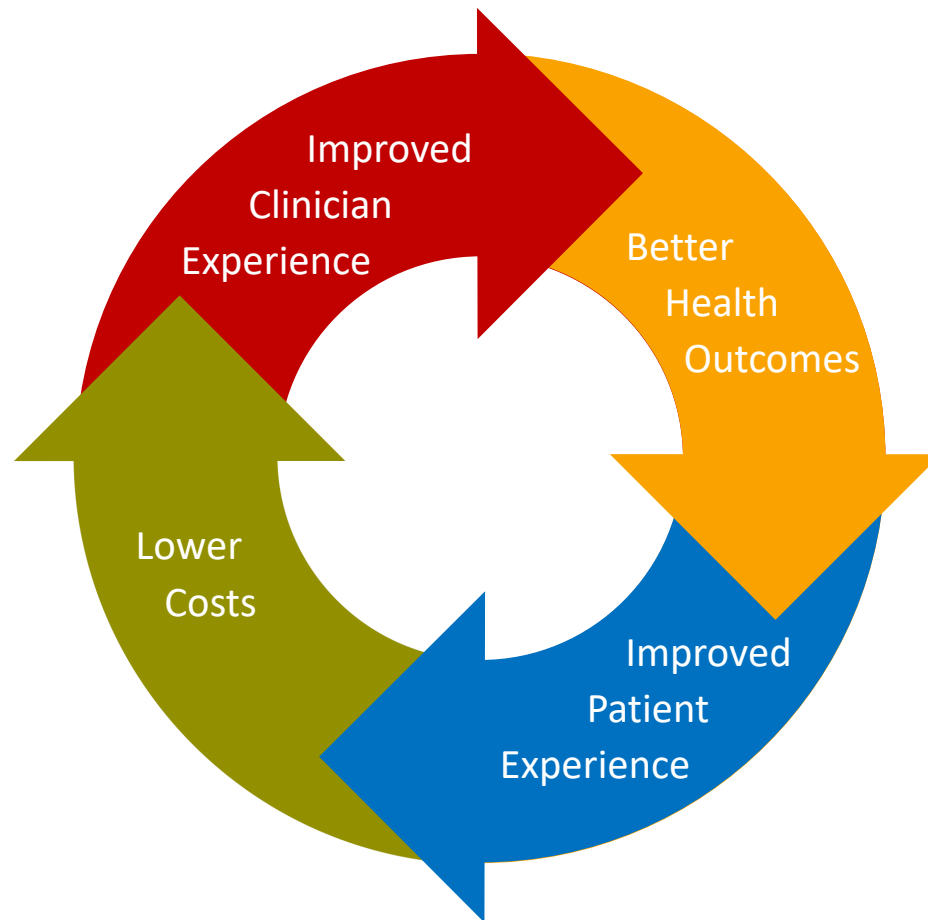
1. Are there extant standards?
(e.g., ANSI, ISO, ASTM, ASHRAE)
2. Do new standards need to be developed?
3. Do the standards address methods for measuring occupant health, safety and welfare?

Considerations for proposals

4. Has independent research measured occupant health, safety and welfare in clinical settings?
5. Does research include measures of physiological and psychological responses from patients and/or staff (e.g., stress hormones, blood pressure, etc.)?
6. Are there plans for independent, COI-free research in health care facilities—if so, on patients, health care professionals, or both?
7. Does it support the health care “Quadruple Aim”?

What is the “Quadruple Aim”?

Proposals should mind the health care Quadruple Aim.



APRC membership

- Membership is by **invitation or application**
 - Credentials may be sent to FGI or to any acoustics committee member
- The committee is **balanced** according to:
 - Geography
 - Gender
 - Age
 - Profession (acoustics, medicine, public health, architecture, design, engineering)
 - Credentials

16 members for 2022 edition

LEADERSHIP

David M. Sykes
Chair & Co-founder, faculty RPI (retired)

Kurt Rockstroh,
FAIA, FACHA, past-Pres. FGI, FGI board member, board liaison

Heather Livingston
FGI COO & Managing Editor

ACO. CONSULTANTS

Edward Logsdon, PE
Vice Chair, Delegate

Mandy Kachur, PE
Vice-Chair

Noral Stewart, PhD

Jack Evans, PE

Erik Miller-Klein, PE

Elizabeth Valmont,
PhD

HEALTHCARE

Daniel J. Fink MD, consultant to WHO & CDC

Kathleen Philbin RN, PhD, member NICU guidelines committee

Paul Barach MD, BMedSci, MPH, Maj. (Ret), prof. Jefferson Col. of Population Health

Mathias Basner MD, Pres. Int. Comm. on Biological Effects of Noise

Richard Neitzel PhD, prof. Univ. of Mich. School of Public Health

EXPERT ADVISERS

Jane Rohde AIA,
Chair of FGI Residential Group, Vice-Chair of FGI

Frederick Gallun
PhD, FASA, Lab. Dir. VA's Nat. Ctr. for Rehabilitative Auditory Research

Dylan Neu PE,
Centers for Disease Control, OSHA

2022 edition activity highlights

- Highlights of activities in support of 2022 documents
 - Resulted in **14 major changes** to the *Guidelines*.
 - Reviewed approximately **100 public proposals, plus comments from code officials and the HGRC Steering Committee**.
 - Developed proposals to **improve acoustics sections** based on new evidence and research.
 - New language in FGI's "**Project Planning**" section recommending acoustics approval (safety risk assessment appendix text)
 - Drafted patient and health care professional **telehealth checklists** for publication in FGI's Beyond Fundamentals library (pending)

2022 edition policy highlights

- Policy issues raised by federal laws and changes by agencies and/or medical profession:
 - CDC-NHANES report (“disabilities” to include hearing loss per ADA)
 - American Public Health Association policy approved: redefines “noise” as “unwanted and/or harmful sound”
 - 2018 SCOTUS decision – Affordable Care Act recognized as “settled law,” enabling HCAHPS enforcement
 - Other policy activities affiliated with the National Academy of Medicine, President’s Council on Science & Technology, American Academy of Pediatrics

APRC mission & goals 1-4

1. **Promote, accelerate, and support** patient recovery through acoustic conditions that reduce stress and anxiety while encouraging sleep and growth.
2. **Prevent medical errors** caused by miscommunication, stress and fatigue among patients, medical professionals, and caregivers and families.
3. **Protect** speech privacy and security.
4. **Track and interpret** scientific and regulatory environments by focusing on relevant medical, scientific, legislative, and federal agency guidance.

APRC mission & goals 5-7

5. **Develop** and continuously improve regulatory criteria to ensure they are realistic, understandable, and enforceable through rigorous commitment to FGI's continuous improvement process (CIP)
6. **Listen, learn, and teach** by being active in the work of allied professional societies in disciplines appropriate to the committee's work.
7. **Recruit, retain, and refresh** a balanced team of top professionals from medicine, public health, and acoustic science who are committed to teamwork and collaboration.

Let's talk!

- FGI's acoustics committee is **already organizing** for the next *Guidelines* edition in 2026.
- We seek to **broaden representation** to include ASA divisions **Psychological & Physiological Acoustics, Speech Communications, Architectural Acoustics, and Noise**.
- We plan to develop a **research roadmap**.
- We plan to simplify **speech privacy** and do further work on **signal-to-noise ratio** and **disability rights** and **operating room** noise.

Thanks again!

- *We welcome your proposals!*
- *We welcome your involvement!*
- Questions? Please email the committee's vice chair, Mandy Kachur: kachur@SoundscapeEngineering.com

