Major Additions and Revisions

Without a doubt, the most significant change to the 2018 edition of the *Guidelines* is that these important design standards are now presented as three independent documents: *Guidelines for Design and Construction of Hospitals, Guidelines for Design and Construction of Outpatient Facilities*, and *Guidelines for Design and Construction of Residential Health, Care, and Support Facilities.*

In 2014 the *Guidelines* was expanded from one comprehensive document that addressed hospitals, outpatient facilities, and long-term care facilities to two documents, with the requirements for residential care facilities moving into a standalone document. This change allowed the Residential *Guidelines* to emphasize the residential nature of the facilities included, where provision of resident-centered care is becoming the industry standard. The 2018 Health Guidelines Revision Committee (HGRC) has further separated the *Guidelines* content to address hospitals and outpatient facilities independently. The primary goal of this change was to make the new outpatient facility document flexible enough to address the wide variety in outpatient project types, which is expected to continue to evolve as the U.S. health care industry adjusts to changing needs over the next decade. The facility types included in the Outpatient *Guidelines* run the gamut from small clinics, doctor's offices, and tenant improvements in a larger building to large medical office buildings housing multiple clinical services and large freestanding imaging or surgery facilities.

Changes to the Hospital *Guidelines* were made to clarify requirements and to allow flexibility in some designs to support development of facilities that will be functional over the long term. Major additions and changes are described below.

Part 1: General

Functional program. In the previous edition, architectural space requirements were placed at the end of the functional program requirements section. In the current edition, revisions to the functional program were incorporated to clarify its intent and scope and the space program was removed to its own section as development of the space program is a separate process from functional programming.

Acoustic design. The existing acoustic criteria in the *Guidelines* were reviewed by the Acoustics Proposal Review Committee (APRC), a panel of highly qualified acousticians advised by clinicians. The APRC developed revisions for the acoustic requirements in the 2018 edition of the *Guidelines* that update, clarify, and provide consistent design criteria. They revised the language regarding exterior noise classification and expanded the exterior shell composite sound transmission ratings to provide both OITCc and STCc levels as well as appendix guidance to help users of the document determine under what conditions each measurement requirement should be applied. In addition, the APRC rounded out requirements for vibration control and isolation, including a new requirement to consider exterior sources of ground vibration (e.g., road and rail traffic) when selecting a site and during design of a facility. Further appendix guidance was added for noise levels in operating rooms and demising wall assemblies.

Sustainable design. Significant changes were made to the sustainable design section, though much of the material appears in the appendix and is therefore advisory only. Key among the new requirements are those for waste minimization, in particular considerations for sourcing mercury-free and mercury-reduced products and developing a waste management plan to divert building materials from landfills. Guidance also has been introduced for creation of a measurement and verification plan to address long-term continuous use of potable water and to track consumption of gas, electricity, and thermal energy by source.

Design considerations for patients of size. The term "bariatric" has been replaced in this edition of the *Guidelines*, except when in reference to patients undergoing bariatric surgery, to better reflect the needs of patients

who do not fit the clinical definition of obese but may still require expanded clearances and/or expanded-capacity lift equipment (e.g., professional football players). Determining the need for accommodations for patients of size is now required during the planning phase, when the health care organization must project the number of spaces needed to accommodate patients of size and the number of expanded-capacity lifts that will be required to serve its patient population.

Emergency preparedness and management. New appendix information provides guidance for preparing an emergency preparedness assessment, planning for resiliency, and projecting space needs in the event of an emergency.

Part 2: Hospital Facility Types

Accommodations for care of patients of size. Whereas in the 2014 edition the bariatric nursing unit section contained requirements pertaining to treatment of patients clinically diagnosed as obese, in the 2018 edition a section on accommodations for care of patients of size has been located in the Common Elements for Hospitals chapter. The Bariatric Accommodations Topic Group developed minimum requirements for spaces where care will be provided to patients of size. Their efforts were based on a workshop hosted by Hill-Rom in which mock-ups of spaces were used to determine clearances needed for delivery of care that is safe for both patients and caregivers. Placing these requirements in the common elements chapter supports consideration of provisions to accommodate patients of size throughout the hospital instead of only in a dedicated nursing unit. Requirements in this section include a patient handling and movement assessment, clearances for rooms with and without overhead or floor-based lifts, and door openings along the path of travel for these patients.

Airborne infection isolation room. AII room doors and doors to the anteroom, if provided, are now permitted to have either a self-closing device or an audible alarm that can be activated when the AII room is in use as an isolation room. This revision also applies to the airborne infection isolation/protective environment room.

Sexual assault forensic examination (SAFE) room. Although provision of a sexual assault forensic examination room is not a requirement for hospitals, the *Guidelines* now detail design requirements should a health care organization choose to provide one. Provisions for the space include lockable storage areas for forensic collection kits and lab supplies, a private toilet and shower, and a consultation room for family, support services, and law enforcement.

Accommodations for telemedicine services. The use of telemedicine is rapidly expanding in the United States, particularly in rural areas where medical services can be hundreds of miles away. In the 2014 edition, telemedicine services were addressed in one paragraph in the critical access hospital chapter. The 2018 edition provides minimal requirements and considerable appendix guidance on considerations for designing clinical telemedicine spaces. In an effort to keep the requirements flexible for the many different types of telemedicine services offered, the requirement is only for spaces where clinical telemedicine services are provided. Use of bays, cubicles, or rooms is permitted, and space requirements are dependent on the equipment and persons to be accommodated. Provisions for privacy, lighting, surfaces, acoustics, and facility identification are considered.

Pre- and post-procedure patient care. The requirements for pre- and post-procedure patient care areas now allow health care organizations to either provide separate pre-procedure and recovery patient care areas or to combine them, including Phase I (PACU) and Phase II recovery areas, into one space; the goal is to facilitate provision of spaces that support the way patient care is provided in the facility. When a combination area is provided, it must meet the most restrictive design requirements for the space types that are combined. In addition, a minimum of two patient care stations per procedure, operating, or Class 2 or Class 3 imaging room is required when a combined pre- and post-procedure patient care area is provided. Facilities may still choose to separate services into two or three areas, but the change allows facilities greater flexibility in the provision of care.

Sterile processing. In the 2014 *Guidelines*, the satellite sterile processing facility requirements made a one-room sterile processing facility the minimum requirement. Considering the importance of maintaining a dirty-to-clean workflow in sterile processing areas, the infection preventionists on the HGRC and other subject matter experts determined that the minimum requirement for these spaces is a two-room sterile processing facility, consisting of a decontamination room and a clean workroom. For spaces where small countertop sterilizers are used for a limited workflow, a one-room sterile processing facility is permitted as an exception. However, whether a project has a two-room or one-room sterile

processing facility, the facility must be designed to support a one-way traffic flow from contaminated to clean. Requirements for storage of clean instruments are also provided. The 2018 edition of both the Hospital *Guidelines* and the Outpatient *Guidelines* provides expanded guidance for designing sterile processing facilities that support and encourage clinical personnel to comply with professional practice guidelines for cleaning, decontaminating, and sterilizing surgical instruments.

Technology distribution room. TDR space requirements have been revised to provide a minimum three-foot clearance on all sides of equipment racks. In the 2014 edition, the requirement was to provide a minimum of 12 feet by 14 feet for the TDR.

Critical care unit patient rooms. In new construction, all patient rooms in critical care units except NICUs will be single-patient rooms. An exception is provided for renovation of patient rooms or cubicles for single-patient use provided they have a minimum clear floor area of 150 square feet.

Procedure and operating rooms. The 2018 HGRC made a concerted effort to align the definition and application of requirements for the various room types where procedures take place. This realignment was based on the level of invasiveness of the procedure and the perceived level of risk to the patient, but the revised requirements also address the spaces needed to support care for these patients. A new table helps designers and owners quickly determine which procedures should be performed in each room type. The *Guidelines* has updated the clearances required for operating rooms (ORs), allowing for multiple layers to support different activities in the OR. The appendix includes expanded guidance on determining OR size and layout and a list of equipment often used in operating rooms. In addition, the appendix has been expanded to describe clearly how clearances were determined and why it is important to provide them.

Imaging rooms. A complete overhaul of the imaging requirements was undertaken. As part of this effort, interventional imaging was removed from the text and nuclear medicine was incorporated into the imaging services requirements. The HGRC created a classification system (summarized in a new imaging classification table) for imaging rooms, which outlines basic imaging room requirements and provides additional details for specific modalities. This approach allows imaging room design to adapt more easily to new technologies and changes in equipment as they arise.

Mobile/transportable medical units. A guiding principle of the HGRC is that physical design requirements for specific medical services should be the same regardless of where those services are provided. To support that principle, the chapter on mobile/transportable medical unit design was completely revised for the 2018 edition based on the imaging classification system and clarified requirements for examination/treatment, procedure, and operating rooms mentioned above.

Part 3: Ventilation of Health Care Facilities

Beginning with the 2010 *Guidelines* edition, ANSI/ASHRAE/ASHE Standard 170: *Ventilation of Health Care Facilities* has been incorporated into the *Guidelines* to provide ventilation requirements for health care facilities. Therefore, the 2017 edition of ASHRAE 170, with all addenda approved through November 2017, has been incorporated as Part 3 of this edition of the FGI *Guidelines*.

FGI continues to work with ASHRAE to revise and update Standard 170. Since publication of 170-2013, the ASHRAE Standard Standing Project Committee for 170 has been working to divide the requirements in the document into separate hospital, outpatient, and residential care categories to make it easier for users to apply the requirements. This process is not complete, but the 2017 edition of 170 reflects the beginning of the process.

ASHRAE keeps Standard 170 under a continuous maintenance process, which permits official changes to be made at any point over the life cycle of the document. It is the intention of FGI that addenda to 170 issued by ASHRAE after publication of the 2017 edition shall be considered part of the 2018 *Guidelines* documents.