

Operating Room Requirements for 2014 and Beyond

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A comparison of the inpatient surgery section (2.2-3) and the ambulatory surgery center chapter (3.7) in the 2014 edition of the *FGI Guidelines for Design and Construction of Hospitals and Outpatient Facilities* to the same sections in the 2010 edition of the *FGI Guidelines for Design and Construction of Health Care Facilities* reveals a number of changes. Most of these modifications were made to bring the requirements for inpatient and outpatient surgery facilities into closer alignment, which means the language will largely be familiar. However, some intentional differences remain, the primary one being the size of operating rooms.

As surgical procedures previously performed primarily in an inpatient setting are increasingly taking place in outpatient facilities, the Health Guidelines Revision Committee (HGRC) members believe the physical environment for surgery should meet the same standards no matter where that surgery takes place. At the same time, they wanted to leave enough flexibility in the outpatient requirements to accommodate the space requirements of outpatient procedures that do not require a lot of equipment or staff but do require an aseptic field.

In a review of the 2010 requirements, the HGRC Specialty Subgroup on Operating Rooms identified several important components of the ambulatory surgery text that needed improvement. To address this, the group started with a thorough comparison of inpatient and ambulatory surgery text in the 2010 edition. This effort revealed that some requirements in the ambulatory surgery chapter did not exist in the inpatient surgery section and vice versa. This article will highlight the key changes in the surgery sections that resulted from the group's work and the public review of their proposed changes.

Guidelines requirements are intended to be minimum standards, but these minimums must result in environments that support the safety of both patients and staff in all locations where surgery takes place.

New Definitions

In the glossary of the 2014 *Guidelines for Design and Construction of Hospitals and Outpatient Facilities*, new definitions have been provided for procedure room, invasive procedure, and the two areas that make up the surgical suite—semi-restricted and restricted. These definitions are the foundation for the changes made in the body of the document, especially the distinction between an operating room and a procedure room and the types of procedures performed in each.

“Invasive procedure” is a broad term often used to describe procedures from a simple injection to a major surgical operation. For the purposes of the *Guidelines*, however, an ***invasive procedure*** is defined as a procedure that penetrates the protective surfaces of a patient’s body (e.g., skin or mucous membranes), is performed in an aseptic surgical field, generally requires entry into a body cavity, and may involve insertion of an indwelling foreign body. Such procedures must be performed in an operating room suitable to the technical requirements of the procedure with consideration of infection prevention and anesthetic risks and goals. The intent is to provide a safe environment for procedures that carry a high risk of infection, either by exposure of a usually sterile body cavity to the external environment or by implantation of a foreign object(s) into a normally sterile site. Procedures performed through orifices normally colonized with bacteria and percutaneous procedures that do not involve an incision deeper than skin are not included in this definition.

A ***procedure room*** is defined as a room for the performance of procedures that do not require an aseptic field but may require use of sterile instruments or supplies. Procedure rooms are considered unrestricted areas. Local anesthesia and minimal and moderate sedation may be administered in a procedure room, but anesthetic agents used in procedure rooms must not require special ventilation or scavenging equipment.

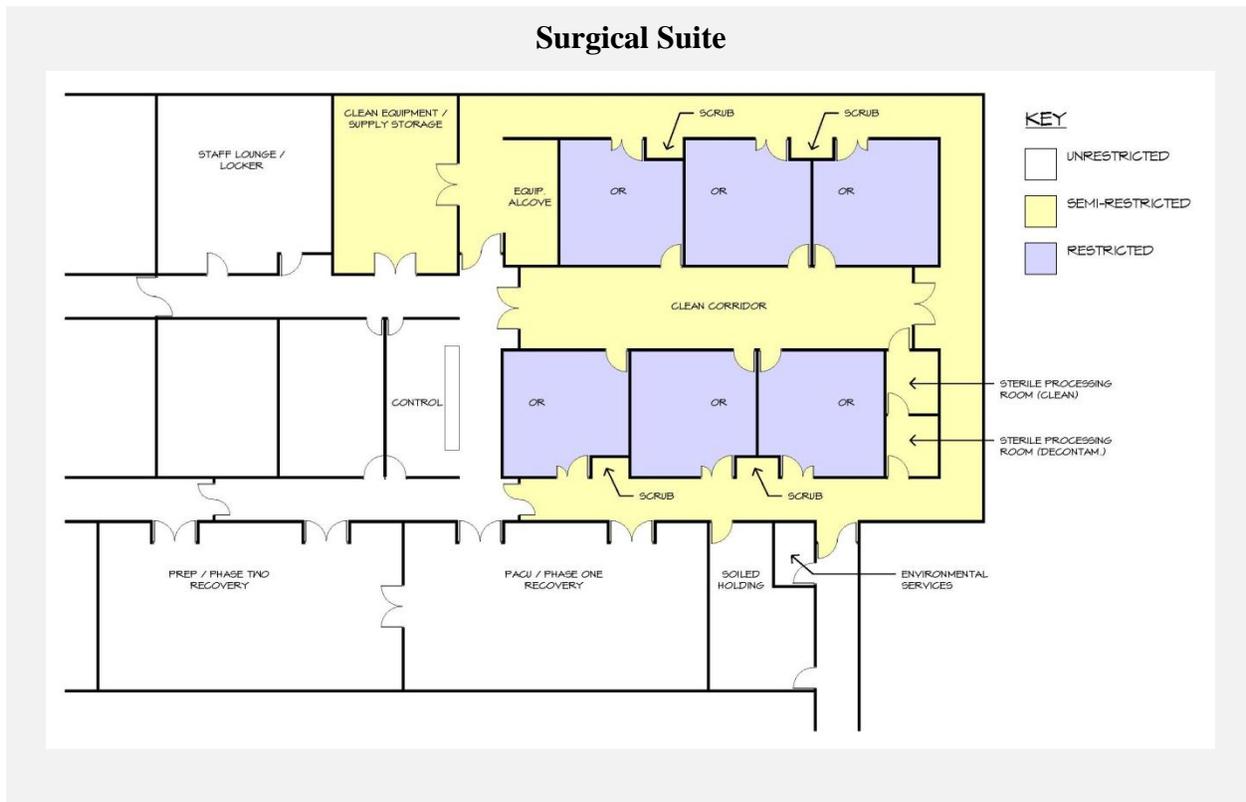
An ***operating room*** (OR) is defined as a room in the surgical suite that meets the requirements of a restricted area and is designated and equipped for performing surgical operations or other invasive procedures that require an aseptic field. Any form of anesthesia may be administered in an OR as long as appropriate anesthesia gas administration devices and exhaust systems are provided. A ***hybrid operating room*** is an operating room that has permanently installed equipment to enable diagnostic imaging before, during, and after surgical procedures. (Use of portable imaging technology does not make an OR a hybrid operating room.)

A ***restricted area*** in a surgical suite is a designated space that can only be accessed through a semi-restricted area in order to achieve a high level of asepsis control. Traffic in the restricted area is limited to authorized personnel and patients, and personnel are required to wear surgical attire and cover head and facial hair. Masks are required where open sterile supplies or scrubbed persons may be located.

A ***semi-restricted area*** comprises the peripheral support areas surrounding the restricted area of a surgical suite. These support areas include facilities such as storage areas for clean and sterile supplies, sterile processing rooms, work areas for storage and processing of instruments, scrub sink areas, corridors leading to the restricted area, and pump rooms.

Related definitions clarified in the 2014 glossary include those for spaces in pre- and postoperative patient care areas. A ***patient care station*** is a designated space where a specific patient care function takes place; the term does not imply any structural requirement. The structural requirements, instead, are included in the definitions of bays and cubicles, which are types of patient care stations: A ***bay*** has one hard wall at the headwall and three soft walls (cubicle curtains or portable privacy screens), and a ***cubicle*** has at least one opening and no door

and is enclosed on three sides with full- or partial-height partitions. A patient care station can also be a room.



Outpatient Surgery Facilities

In previous editions of the *Guidelines*, operating rooms in ambulatory surgery centers were classified according to the A – C levels based on anesthesia use from an American College of Surgeons document on office-based surgery, which has not been published for more than 10 years. Determining requirements such as size and location of an operating room according to the type and level of anesthesia administered is no longer practical. The minimum space in today’s operating rooms must be sufficient to accommodate all equipment and personnel needed in the OR, not just the equipment and personnel associated with administration of anesthesia. For example, a hernia repair can be performed under local, regional, or general anesthesia and the size of the OR for the procedure should not be based on the type of anesthesia used but on the equipment and number of staff required.

In Chapter 3.7 (Outpatient Surgical Facilities) in the 2014 *Guidelines*, the decision to move away from levels of anesthesia as a determinant of room size resulted in a minimum size requirement for an outpatient operating room (formerly Class B and Class C) of 250 square feet. Recommendations for sizing ORs that may need to be larger are included in the appendix. The room previously known as a Class A operating room is now referred to as a procedure room and has a minimum clear floor area of 150 square feet.

Inpatient Surgery Facilities

The inpatient surgical facility text provides requirements for general operating rooms, hybrid ORs, and ORs for surgical procedures using portable imaging equipment or that require additional personnel and/or large equipment. The minimum inpatient OR size remains 400 square feet to provide flexibility and accommodate the amount of equipment used in traditional inpatient procedures, which is typically far more than that used in surgeries performed in outpatient settings. The size specified for procedures requiring more staff and/or equipment remains a minimum of 600 square feet.

A size for the hybrid OR is suggested in the appendix rather than required in the main text because the size needed for the room will depend on the specific imaging equipment to be installed. However, a minimum room dimension of 24 feet is required, although 22 feet is permitted in renovation projects where structural limitations make this dimension impossible to meet. As with all spaces under design, the equipment manufacturer must be consulted to determine the size of the equipment to be installed and the clearances needed for its safe use.

Pre- and Postoperative Patient Care Areas

The sections on preoperative patient care areas and Phase I and Phase II recovery areas have been updated to clarify the requirements. One addition states that these are unrestricted areas, which means individuals in these areas may wear street clothes and do not need to cover their hair; as well, there are no strict ventilation requirements.

Determining Minimum OR Space Requirements

The minimum square footage for an outpatient operating room included in the 2014 FGI *Guidelines for Design and Construction of Hospitals and Outpatient Facilities* was determined by combining the square footage of the minimum amount of equipment required, the square footage for the minimum number of people required, and a space of approximately 4 feet (1.22 meters) for a minimum safe traffic pathway on all four sides of the sterile field. The sterile field includes the OR table width of 1.75 feet plus 2 feet on each side to accommodate personnel and outstretched patient armrests. The safe traffic pathway of 4 feet includes space for two people to meet and pass each other without touching either personnel wearing sterile attire standing at the sterile field or non-sterile surfaces (e.g., walls, people, or equipment). This distance permits two people, both of whom are within the sterile field, to pass each other without contaminating their sterile attire by touching unsterile surfaces. An open traffic pathway is required on all four sides to provide space for personnel to set up a sterile field prior to the procedure, assist with safe patient evacuation using a stretcher in case of an emergency, pass between the back table and the wall during the procedure, and pass at the head of the patient without interfering with the work of the anesthesia care provider.

When calculating the square footage needed to accommodate the minimum amount of required equipment, the assumption was made that all equipment would fit tightly together; however, this frequently is not possible due to equipment shape.

The minimum equipment for a surgical procedure includes an anesthesia machine, anesthesia supply cart, anesthesia professional chair, intravenous pole or table, case cart/equipment delivery system cart, prep stand, portable documentation station with chair, back instrument table, ring stand, two trash containers, soiled linen container, hazardous waste receptacle, mayo stand, kick bucket, surgical field suction attached to a wall, image viewers, and a sharps disposal receptacle. The required personnel include the surgeon, scrub nurse/technician, circulating nurse, and anesthesia care provider. A 9-square-foot rectangle is required to allow for clear door swing when a stretcher is in the room.

The number of Phase I (PACU or post-anesthetic care unit) patient care stations required in both inpatient and outpatient settings has been defined as 1.5 per OR. If that calculation yields a fraction, the number of patient care stations provided is to be rounded up to the next whole number. As explained in the definition of patient care areas, a patient care station can be a single-patient room or a bay or cubicle in a room with spaces for multiple patients.

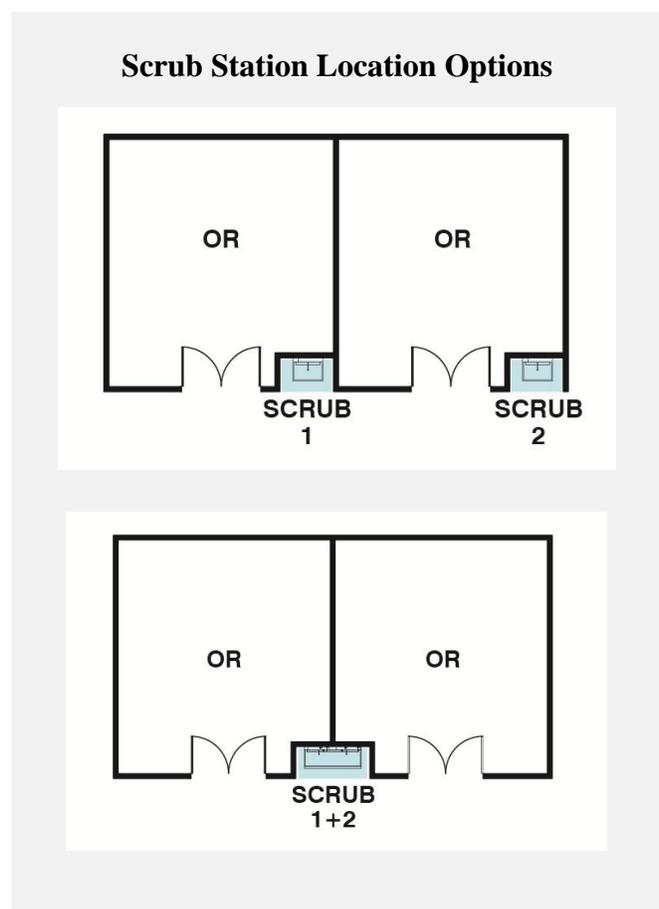
The location for hand-washing stations in preoperative and recovery areas with multiple patient care stations in the same room (i.e., not private patient care rooms) is now consistent in ambulatory and hospital surgery facilities. The formula is one hand-washing station for every four patient care stations. A requirement has been added that the hand-washing stations must be evenly distributed so the distance from the two patient care stations farthest from a hand-washing station is approximately equal.

Support Areas for Surgical Facilities

The location for scrub sinks and the number of sinks required has been clarified. At least one scrub position must be located next to the entrance of each operating room. A scrub station with two scrub positions may serve a pair of operating rooms as long as it is located next to the entrance to each OR. Scrub stations are not permitted to impede on the width of the corridor. Information about placing the scrub station in an alcove is provided in the appendix, including comments about avoiding splatter from the sinks.

The following support area requirements have been removed from both the ambulatory and the hospital surgical facilities text:

- A “substerile” room between every two operating rooms. Details on this will be provided in a separate article on sterile processing rooms in this FGI Update series.
- The need for the door to the staff locker room to open directly into the semi-restricted area of the surgical suite has been removed. The current requirement only states that a locker room must be provided. This change allows for this facility to be shared with another department. The same is true for the lounge used by the perioperative team.



Office-Based Surgery Facilities

In the 2010 edition of the *Guidelines*, Chapter 3.8 is titled “Specific Requirements for Office-Based Surgical Facilities,” and many of the requirements are similar to those in Chapter 3.7. The committee considered removing this chapter based on the rationale that the office-based surgery setting is an ambulatory surgery setting, albeit a small one. The final decision, however, was to keep the chapter, retitling it “Specific Requirements for Office-Based Procedure and Operating Rooms” and cross-referencing as much as possible the requirements in Chapter 3.7 (Outpatient Surgical Facilities). The revised chapter now highlights those characteristics that are truly different for procedure and operating rooms in physicians’ offices.

To summarize the end result of the changes from the 2010 to the 2014 edition, many of the requirements are the same for surgical facilities in hospitals and ambulatory settings with the exception of minimum room sizes. The Health Guidelines Revision Committee agreed that, based on the type of surgical procedures being performed in ambulatory settings today, it is important that most of the requirements for the physical environment be the same wherever patients are undergoing surgery.

About the Author

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