

Guidelines for Design and Construction of Hospital and Health Care Facilities
Record of Formal Interpretations as of December 1, 2003

Decisions published here were rendered after a six-person panel of members of the Health Guidelines Revision Committee (HGRC) reviewed the request and a consensus was achieved. They are considered formal interpretations of the 103-member HGRC, but they are not binding for those states that reference the Guidelines. Rather, they are advisory in nature and are intended to help the user and the adopting authority having jurisdiction (AHJ) maximize the value of the Guidelines.

Further comments from members of the Interpretations Committee have been added to some of the formal interpretations. These comments are not to be considered a part of the formal interpretation but rather as explanatory information offered to help those who use the Guidelines.

FIs are rendered on the text of the requested edition of the Guidelines. However, any FI issued shall apply not only to the requested edition of the Guidelines but also to any other edition of the Guidelines in which the text is identical, except when deemed inappropriate by the HGRC.

In all cases, it is important to remember that the ultimate interpretation of information contained in the Guidelines is the responsibility of the state authority having jurisdiction.

The procedure for developing FIs is handled by the Facility Guidelines Institute. Please read the “Rules for Requesting a Formal Interpretation” (posted on the AIA Web site) before forwarding a question. Also linked to the AIA Web site is a form for requesting a formal interpretation (this form also appears in the back of the 2001 edition of the Guidelines).

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REQUEST

Guidelines edition: 2001

Paragraph reference: 5.1

Question 1: Is it the intent of the 1996-97 or 2001 edition of the Guidelines that the person(s) appointed to the multidisciplinary ICRA committee will also be the expert of record in facility design and the design professional for the project?

Question 2: Is it the intent of these editions of the Guidelines that temporary measures undertaken by a contractor during construction as part of the “construction-related

requirements of the ICRA” to protect one part of a facility from the effects of construction activities taking place in another part of the facility be incorporated by the design professional in the contract documents?

Question 3: If the answer to Question 2 is no, then what is the nature of the requirements intended by these editions of the Guidelines?

OFFICIAL RESPONSE

To Question 1: No! Chapter 5 clearly states that the environmental infection control requirements shall be developed by a multidisciplinary committee having the expertise necessary to prepare an infection control risk assessment (ICRA), i.e., expertise in infection control, risk management, facility design (may or may not be the architect of record), and construction (may or may not be the builder of the project). However, it should be stressed that the facility (the owner and/or governing body) is responsible for assembling ICRA for projects.

During the programming phase of a project, the owner is responsible for developing and providing the design professional (architect of record) with an ICRA containing specific construction-related requirements. Chapter 5.1 also requires the design professional (architect of record) to “incorporate the specific, construction-related requirements of the ICRA in the contract documents.”

The design professional may accomplish this in one of several ways—by (a) referring to the owner-supplied ICRA in the contract documents, so the contractor is made aware of the existence and source of the ICRA; (b) inserting all or a portion of the owner’s ICRA and identifying it as such within the contract documents so the design professional does not assume responsibility for the technical sufficiency of the ICRA; or (c) incorporating the intent of the owner’s ICRA in the design and details shown in the contract documents, thereby assuming responsibility for the technical sufficiency of the ICRA.

Including references to the owner-supplied ICRA in the contract documents will satisfy the intent of the Guidelines to ensure that the ICRA requirements become part of the contractor’s contract and responsibility. The constructor (builder, contractor, CM, etc.) is then responsible to implement the specific construction-related requirements outlined in the ICRA during construction.

To Question 2: Again the answer is “NO.” Temporary measures taken or installed by the contractor (constructor) are the responsibility of the contractor. However, as stated above, it is the responsibility of the designer either to reference the owner-supplied ICRA in the contract documents or to incorporate the ICRA in the documents. It is important to note again that the ICRA is the sole responsibility of the owner, as stated in the response to Question 1 above. Therefore, while the designer (architect of record) does play a role in making sure the ICRA is included by reference in the contract documents, it is the responsibility of the contractor and the owner to make certain that means and methods and infection control protocols are diligently carried out during the course of the project.

To Question 3: The intention of the Guidelines is as follows:

- The owner's designated committee of experts will formulate the ICRA.
- The owner and/or its designated representative will be continuously responsible for carrying out the recommendations in the ICRA.
- The architect of record will reference or incorporate the ICRA in the contract documents.
- The constructor (builder, contractor, CM, etc.) will implement the requirements of the ICRA.

The development and use of an ICRA is a dynamic process that is most important to the well-being of all occupants of a medical facility. Because of the dynamic nature of the process, a representative of the ICRA committee convened by the owner most likely should be available to the constructor at all times to make sure specific construction-related changes and/or activities are addressed and brought to the attention of all concerned.

One final statement: Since the ICRA is the responsibility of the owner, this fact needs to be clearly defined in the contract between the owner and the architect and/or engineer of record (the design professionals).

REQUEST

Guidelines edition: **1996-97** *Paragraph reference:* **7.2.A5**

Question: Can walls be removed from toilet rooms in single patient med-surg rooms? In lieu of walls can a curtain on a track be used, creating a situation similar to ICU rooms where we use pullman-type toilets that are in the room rather than in a separate in-suite toilet room?

OFFICIAL RESPONSE

No, the Guidelines require a physical room for a patient toilet area.

Further comments

The following commentary by members of the Interpretations Committee is intended to give insight into why this interpretation was rendered. It is provided for informational purposes only and should not be considered a part of the formal interpretation.

- The allowance of a privacy curtain/pullman-type toilet in the ICU setting is a recognition of the more acute nature of that patient, who (generally) has less of an ability to utilize the toilet and an increased need for staff oversight and observation. In

short, there are very real programmatic reasons for that configuration in the ICU setting that do not automatically relate to the typical M/S setting, even in a single.

- Based on our discussions related to allowing a sliding door on toilet "rooms" and the discussion about still requiring sound privacy, I believe the intent of the Guidelines is to require the toilet to be in a separate room with a sink and a door on that room even if the patient room is a single room.
- The first sentence in 7.9.A5 does not merely require access to a toilet; it requires access to a toilet room, and that sentence has been repeated verbatim in every edition of the Guidelines since at least 1974. The definition in *Webster's Third International Dictionary* reads, "A part of the inside of a building, shelter, or dwelling usually set off by a partition." The last time I looked, a curtain did not qualify as a "partition"; hence, a space set off by a curtain would not constitute a "room," as defined by Webster.
- From its very beginning, the Guidelines Revision Committee has been very particular when calling for a "room." If the committee members believed a "room" was not required, they called for an "area" or an "alcove."

Allowing the patient toilet room to be an open area of the bed room would make Table 2, "Ventilation Requirements," impossible to comply with. Toilet rooms must have 10 air changes per hour with all air exhausted directly outdoors and the pressure relationship is "in." Patient rooms require only 2 (6 or 4 in the 2001 edition) air changes per hour, a pressure relationship of "neutral," and the air may be recirculated.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.2.B19 and 20**

Question: Regarding bathing facilities in a medical/surgical nursing unit, I assume that although we have individual bathing facilities in each room, a "special bathing facility" for each 100 beds is still required for patients on stretchers, carts, and wheelchairs per 7.2.B19. My question is whether this "special bathing facility" is considered a "central bathing facility" as described in 7.2.B20? If so, it appears the space would require direct access to a patient toilet room.

OFFICIAL RESPONSE

The special bathing required by 7.2.B19 for each 100 beds should be considered a "central bathing facility" and must have direct access to a toilet room per 7.2.B20.

Further comments

Bathing frequently stimulates the need to use the toilet.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.3.A13**

Question: What is the definition of air conditioning when requiring emergency power for critical care units?

OFFICIAL RESPONSE

For the purpose of Paragraph 7.3.A.13, the definition of air conditioning is consistent with that of other nationally published standards in this area. Therefore, the chillers or other forms of creating cooling for the CCU would not have to be on the essential power supply system; however, the ventilation system would have to be on at least the delayed-automatic or manual connection portion of emergency power in order to maintain pressure relationships and the minimum air changes per hour required in Table 7.2. As with the National Fire Protection Association standards (NFPA 99 and NFPA 70, Article 517), only the heating equipment, supply, return and exhaust ventilating systems need to be on the equipment system of the emergency power supply system.

NFPA 99 Reference:

3-4.2.2.3 Equipment System.

(e) Equipment for Delayed-Automatic or Manual Connection. The following equipment shall be arranged for either delayed-automatic or manual connection to the alternate power source [also see A-3-4.2.2.3(d)]:

1. Heating equipment to provide heating for operating, delivery, labor, recovery, intensive care, coronary care, nurseries, infection/isolation rooms, emergency treatment spaces, and general patient rooms, and pressure maintenance (jockey or make-up) pump(s) for water-based fire protection systems...
3. Supply, return, and exhaust ventilating systems for surgical and obstetrical delivery suites, intensive care, coronary care, nurseries, and emergency treatment spaces.

Further comments

Hospital Engineer

7.3.A13 doesn't require chillers to be served by emergency generators. However, as with all utilities required for patient care, a contingency plan must be developed to maintain appropriate services to meet the needs of the patients and critical care staff.

Hospital Architect

Under Section 7.32.H Emergency Electrical Service, the text states that emergency power shall be provided as required by NFPA 99, NFPA 101, and NFPA 110. Outside of these

requirements, it is up to the designer's experience and the facility's operational needs as to what should also be on emergency power.

Authority Having Jurisdiction

Reading 7.3.A.13 as it is written, you could make the point that "under emergency situations" means when there is a loss of power to the building. And since the term "air conditioning" is included, it could be further interpreted to mean "cooling" for the CCU.

However, with that said, I don't believe it is the intent of the document that *all* those items noted under A13 for the CCU be supplied from the essential electrical power supply system.

My justification is as follows:

1. NFPA Standards 99, 70, 90A, and 101 do not address emergency power for air conditioning in a CCU.
2. Footnote 9 on page 81 of the Guidelines states that the temperature ranges listed in Table 7.2 apply during "normal operation."
3. The statement under 7.3.A.13 is not found in any of the other sections. If it is important, why only CCU and not other critical areas?

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.3.B2**

Question: Paragraph 7.3.B2 of the Guidelines states that "Each coronary patient shall have access to a toilet in the room." Does this section mandate a private toilet for each room, accessible only to the patient occupying the room, or is a shared toilet between two rooms acceptable?

OFFICIAL RESPONSE

The intent of this section is to have a toilet convenient for CCU patient use. A shared toilet meets the intent of the *Guidelines* as long as it is accessible from the patient's room and there is a method of providing privacy for a patient using the toilet facility.

Further comments

The members of the Interpretations Committee added these comments to the "official" response. They are not part of the formal interpretation but are offered as explanatory ***information***.

CCU physician

The issue for CCU patients is that they may need to avoid exerting themselves, thus “nearby” is the operative principle. We want a toilet close by since getting on and off a bedpan can be too strenuous and a long walk may be too draining as well. A portable toilet is okay, but not all facilities use them.

Health care architect

It must be noted that privacy control is sometimes an issue when multiple patient rooms share toilet rooms (locking and unlocking, etc.). For this reason, privacy issues must be addressed when patients will share a toilet facility.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.3.E10**

Question: Please explain what is meant by non-friable ceilings. What standard is used to measure whether products meet this performance criterion?

OFFICIAL RESPONSE

The term non-friable is not defined in the Guidelines glossary. This term is being used generically with no industry standards or testing to back up the recommendation. In the 2001 Guidelines, the term “non-friable” is used as follows:

Non-friable means the material will not crumble when struck or when normal cleaning tools are used such as a soft hair dusting brush. The intent is to provide guidance so that traditional monolithic hard ceiling surfaces can be replaced with acoustical tiles as long as the tiles will not crumble and drop pieces and particles into the air that could be harmful to infants and others in the space below.

Further comments

The members of the Interpretations Committee added these comments to the “official” response. They are not to be considered as part of the formal interpretation but rather as explanatory information only.

Authority Having Jurisdiction:

Webster's dictionary defines friable as “easily crumbled.” Non-friable would mean not easily crumbled. The asbestos industry has more detailed definitions of friable and non-friable, but highly technical definitions were not used by the Guidelines committees. For the purpose of a NICU ceiling, the finish should be judged based on normal cleaning tools

that may be used such as a soft hair dusting brush. I would not accept a spray-applied styrene ceiling finish nor heavily textured soft ceiling tile.

NICU Planner

When the ceiling guideline for NICUs was developed initially, no air testing, material testing, or other methods to define non-friable were referenced. The term friable was used perhaps because it was commonly described and used in asbestos regulations. I found a recent definition of friable as “material that may be crumbled, pulverized, or reduced to powder by hand pressure when dry.” I do not know if that definition presents an idea for a crude test since hand pressure is variable, but will pass it along in response to the request for a method to identify "non-friable" material.

If new language is used to clarify this guideline, my concern is that it should not rule out all acoustical ceiling tiles without some solid research. Many NICUs renovated or built in the past two decades have installed acoustical ceiling tiles to help create better environments.

Facilities/Construction Manager at a Major Children’s Hospital

I believe EPA regulations will probably provide the most technical definition of this term. I too suspect there is a quantitative definition of force or impact under which a material would begin to crumble. This sounds like a term that should be included in the glossary. The Guidelines reads "easily cleanable and non-friable," leading me to believe that what was meant was a vinyl-faced gasketed ceiling tile, or a monolithic ceiling, since the last sentence also reads, “Ceiling construction shall limit passage of particles from above the ceiling plane into the clinical environment.”

Protective environment rooms and airborne infection isolation rooms do not use the term "friable," but are more easily dealt with since these are all single rooms. For the NICU, I support the use of the term non-friable but add language similar to that in the bone marrow transplant (BMT) appendix, which describes that all surfaces should be scrubbable (without crumbling).

Health Care Architect and MD

Non-friable means that the material will not crumble when struck. This language was included to allow a lay-in ceiling system as well as drywall or other monolithic ceilings in NICUs. Certainly a perforated metal panel system with an acoustic material backing is what we had in mind to allow. Since the comment comes from a manufacturer, may I suggest that we use their experience and expertise to work with us on generating better language or exact specifications for ceilings. This could develop into a truly informed guideline table for ceiling types and finally resolve the monolithic ceilings discussion.

REQUEST

Guidelines edition: 2001 Paragraph reference: 7.7 and 9.5

Question: When a health care organization has a surgical suite it intends to use for both inpatient and outpatient surgical services, is it the intent of the Guidelines to permit the use of *both* Chapter 9.5, Outpatient Surgical Facility, and Chapter 7.7, Surgical Suites for hospitals, or do the more restrictive requirements of Chapter 7.7 prevail?

OFFICIAL RESPONSE

An operating suite serving both inpatients and outpatients and utilizing the same ORs and PACU for both types of patients shall be designed to the standards in section 7.7. However, if a health care facility wants to go to the extraordinary effort of providing separate suites for inpatient and outpatient surgery in the same hospital facility, including separate ORs, PACUs, etc., then each service may be designed to the applicable standards (inpatient surgery—7.7 and outpatient surgery—9.5).

REQUEST

Guidelines edition: 2001 Paragraph reference: 7.7.A2, 7.7.B2, 7.7.C14

Question: The definitions provided in 7.7.A do not describe which category (unrestricted, semi-restricted, or restricted) the recovery areas fall into. Also, 7.7.B2 has added the requirement that one must be able to enter the PACU directly from the Surgical Suite, without crossing a public corridor. This requirement leads one to believe that the PACU was intended to be a semi-restricted area, but that is not what is actually written. Similarly, Section 7.7.C14 states the Stage II recovery area should access the PACU without crossing an unrestricted corridor. Again, it is unclear how the Stage II area is defined. Was the intent of the Health Guidelines Revision Committee to state that both the PACU and Stage II recovery area are intended to be treated as semi-restricted areas?

OFFICIAL RESPONSE

The intent was to clarify issues of circulation, not infection control or anything else. The Guidelines Revision Committee wanted to make clear from a design standpoint that patients should not be transported through publicly accessible corridors when going from the OR to the PACU or Stage II Recovery. This could possibly be interpreted as requiring the corridor used for transport between OR and PACU/Stage II to be semi-restricted, but certainly not the PACU or Stage II Recovery. Both PACU and Stage II Recovery will also have access from an unrestricted corridor. The separation should be made between the semi-restricted corridor and an unrestricted PACU or Stage II Recovery. It was not meant

to restrict access to the PACU or Stage II Recovery for physicians, staff, or patient families(if that is your policy).

Further comments

The interpretations committee discussed this issue extensively. Some information from their discussion, including minority comments, is included here:

- I strongly agree with your advocacy for family participation in the recovery process, especially for children. You may prefer that family members wash their hands and wear an overgown as they would in the NICU, but your institution should set policy on such procedures.
- Even if the intent was on design for traffic flow, there is an infection control element in controlling the environment with minimum disruption, especially if the patient needs to return to the OR. The key is that the flow/access as described from OR to PACU to Stage II is not exclusive; we need language that permits additional access to Stage II or PACU in the manner described in the formal interpretation.
- [In our state] we consider PACU to be a semi-restricted area. This is based on the fact that a patient in the PACU may, in some emergencies, have to be returned to surgery. Therefore, this area must be kept in a "sterile" condition, and during the patients' time in the PACU they must be kept separate from all visitors and staff who are not properly garbed (scrubs) or staff who have been in contact with visitors in street attire. We do not require Stage II recovery to conform to the requirements of a semi-restricted area, and in fact, we allow facilities to also use the Stage II as the pre-op holding area. In the Stage II area, visitors and staff in "non-scrub" attire are allowed. [In our state] the flow is one way only from ORs to PACU to Stage II with no back tracking from Stage II to the PACU by staff or patients.
- It is my impression that the intent of the Guidelines was to mandate adjacency between the operating room and the recovery room such that a patient going from OR to PACU would not have to be transported across a public area. The PACU does not have to be a restricted area requiring gowning, etc.
- The fact that the Guidelines call for direct access from the OR to the PACU was never intended to be interpreted as designating the PACU as a restricted area. This would be totally impractical in today's surgical scene in which a high percentage of procedures done under general anesthesia are outpatient procedures after which the patient is discharged from the hospital directly from the PACU. Parents and family coming into the PACU certainly may be requested to don a disposable gown if only for aseptic reasons. (i.e., to prevent bringing in outside contamination, or protection against patient secretions or vomitus). But such visitors should not have to wear caps and gowns or scrub to get into the PACU to take the patient home.

Patients who undergo immunosuppression for their surgery, as in organ transplantation or other procedures requiring immunosuppression, are not usually sent to an open PACU but usually to an isolated recovery cubicle equipped with HEPA-filtered air and all the

other precautions of a restricted area. It is obvious that under such circumstances any visitors would have to adhere to the dress code of the restricted area.

The above comments would be especially applicable to pediatric surgery facilities in which the overwhelming majority of surgical procedures are done on an outpatient basis.

- This question should be broken into two distinct answers:
 - a. The first thing is to ensure that we all understand that PACUs and Stage II Recovery areas are two different functional areas. I believe a general PACU should be considered as semi-restricted. The functional relationship dictated by the Guidelines supports this (direct access from surgical suite, no public corridors), as well as the nature of immediately post-surgical patients who require close monitoring during recovery from anesthesia. Generally, in adult surgery and ambulatory surgery, access to patients in the PACU is limited to nursing staff, OR staff/physicians, and anesthesiologists. Transfer of patients back to surgery is not unheard of...Family/visitor access should be very limited...with the exception of course in Pediatrics, on a case-by-case/program specific basis. It appears entirely reasonable to require gowning in this area as staff can freely circulate within the surgical zone.
 - b. The Stage II Recovery area is just that...a step-down area for those sufficiently recovered from anesthesia to prepare for discharge in Ambulatory Surgery and to a room perhaps in Pediatric Surgery. This area has to be directly accessible from the PACU...but I'd consider it an OPERATIONAL or PROGRAMMATIC decision as to whether this area is semi-restricted. Family and visitors should be allowed to visit with the patient. The degree of gowning should be left up to the facility, depending on the nature of the patients, surgical program/procedures, etc...with all due consideration of infection control and isolation procedures as appropriate.

Therefore, I think the physical parameters articulated in the Guidelines for PACU and Stage II Recovery are appropriate. The operational components that support the physical parameters are another layer, and I believe there should be some leeway in them to account for specific programs and patients.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.7.B1**

Question: 7.7.B1, preoperative patient holding area(s), of the 2001 edition of the *Guidelines for Design and Construction of Hospital and Health Care Facilities* states: “In facilities with two or more operating rooms, areas shall be provided to accommodate stretcher patients as well as sitting space for ambulatory patients not requiring stretchers. These areas shall be under the direct visual control of the nursing staff...” Please define

visual control as intended here. Does visual control mean being able to look directly into a patient's room or space, or is it the ability to monitor the area for the general control of visitors, staff, and patients?

OFFICIAL RESPONSE

Staff/control station(s) shall have visual control of both the entrance to the unit and the general area, which would include doorways or openings to patient spaces. However, it is not a requirement for personnel at this station to have a direct line of sight into each patient area such as would be necessary in a post-operative recovery care area.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.9.C2 and 7.9.D7**

Questions: Are the handwashing lavatory, writing desk or work counter or wall-mounted shelf for writing, and cabinet for medication storage or base cabinet for supply storage accommodated within the 120 square feet of clear area in treatment rooms and in exam/treatment rooms in an emergency room? In other words, is the 120-square-foot area required to be a "net clear square footage," exclusive of the floor area required for all of the items required to be in the room, such as the lavatory, medicine storage cabinet, desk or counter, etc.?

OFFICIAL RESPONSE

In the interpretations committee's review of Sections 7.9.C2 and 7.9.D7, we found the Guidelines do not specifically exclude the desks, work station, sink/ lavatory, or cabinets from the "clear" area within the emergency treatment/examination rooms.

Further comments

It is the committee's opinion that the intent of the Guidelines would be to have clear floor area without any encumbrances. Section 7.9.C2 discusses clear room area with a list of items the clear space shall exclude, while Section 7.9.D7 discusses minimum floor area with a list of items the room shall include. However, from an operational aspect, the additional clear space is desirable because of the intensive and expedited care being provided to patients in these types of rooms.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.9.D15**

Did this question arise from an actual field situation? No.

or from discussion(s) with an authority having jurisdiction (AHJ)? No.

State the purpose of your request for formal interpretation: We are designing an addition and renovation to an existing Level I Emergency Department, and space is at a premium.

Question: Should we interpret the section as a minimum of 2 toilet rooms for every 8 patients, or a minimum of 2 toilet rooms for treatment areas over 8 patients? In other words, if we have 26 patient treatment areas, do we need a minimum of 2 patient toilet rooms or 6 patient toilet rooms?

OFFICIAL RESPONSE

The text of 7.9.D15 is interpreted as requiring a minimum of two toilet rooms regardless of the number of exam spaces. This is a minimum standard, not a recommended ratio, and therefore no ratio is given in the text for a maximum number of treatment areas per number of toilets. The number of toilets should be based on the functional program.

Further comments

- I do not believe two toilets for 26 treatment areas is enough, but the Guidelines do not outline an exact ratio.
- A 2:8 ratio would result in more toilets than any major facility in our state. To me, the paragraph suggests a 1:7 ratio (including any fraction thereof) as a recommended ratio. This would result in a recommended 4 toilets for the 26 exam spaces in question. This would be a recommendation, not a requirement. The four toilet rooms would include the patient hygiene room mentioned in A7.9.E and would include "private toilet rooms" serving pelvic exam rooms.
- I have always interpreted this section [7.9.D15] to mean if you have more than 8 patients you must have a minimum of 2 toilet rooms. Even if you have 30 positions you still only need 2 toilets. I have always done more, but if space is at a premium...just 2.
- This request has put a finger on a poorly worded paragraph which the HGRC probably ought to consider revising for Guidelines 2005. The paragraph clearly suggests that one toilet room is not enough if you have more than 8 patient treatment positions. From this, one might imply that a ratio of 1:8 ought to be provided, but that's not what the paragraph says. All it says is: if you have more than 8 patient positions, you must have at least 2 patient toilet rooms.

REQUEST

Guidelines edition: 2001 Paragraph reference: A7.9.D23

Question: Is it the intent of the Appendix item to 7.9.D23, Bereavement room, to require a 65 STC rating for the walls of bereavement rooms? This rating is quite difficult to achieve, requiring independent stud walls and special acoustic doors that are 2 1/2" thick. According to our acoustical consultant, a rating of 65 is very high, comparable to that for a high-level music performance space. Our consultant recommends an STC 55 for an acoustically private bereavement room for the Emergency Department we are designing. Please advise as to the acceptability of this alternative.

OFFICIAL RESPONSE

The first thing that must be conveyed is that this is an appendix item and therefore not a requirement of the Guidelines unless the state in which the document has been adopted has made the appendix mandatory. Second, the interpretations committee is in agreement with your acoustical consultant and recommends that the 55 STC rating be applied to bereavement rooms. The intent of the Guidelines Revision Committee was to emphasize the importance of the acoustic characteristics of the bereavement room but not to make the recommendation unachievable without a highly specialized design.

Further comments

The following comments from some individual members of the interpretations committee are offered for your information.

Consulting architect

I would suggest that this very strange requirement, which was added to A7.9.D23 in Guidelines 2001, is presented in a unique and possibly inappropriate way. I don't find any other place in Chapter 7 where such a requirement is given either in the body text or in the appendix. All other sound transmission limitations for general hospitals are presented in Table 7.1, where the only other STC 65 requirement is for partitions between patient rooms and high-noise areas such as mechanical equipment rooms, boiler rooms, laundries, kitchens, elevators, etc. Partitions between public corridors and patient or treatment rooms need only have a 55 STC rating, and other occupancies where audible privacy can be an issue (e.g., consultation rooms, exam rooms, conference rooms, etc.) only need 45 STC partitions.

AHJ

The STC requirement (as opposed to recommendation in the appendix) would be in Table 7.1, Sound Transmission Limitations in General Hospitals, which appears to require only a 45 STC for consultation rooms. By giving the bereavement room a higher rating, the Revision Committee intended to emphasize the importance of its acoustic characteristics.

However, the 65 STC may be inordinate; the only other space with this requirement is high noise equipment rooms.

Federal enforcing architect

Table 7.1 does not appear to address a bereavement room and the Appendix is not mandatory, so I would say bereavement room designs with an STC of 55 (public space to patient room) would satisfy the intent of the Guidelines.

REQUEST

Guidelines edition: 2001 Paragraph reference: 7.10.F2

Question: Section 7.10.F2 of the 2001 edition of the *Guidelines for Design and Construction of Hospital and Health Care Facilities* requires provision of a patient toilet "accessible from the procedure room" for Ultrasound. Does this mean that a toilet must be accessible from within each procedure room? Also, is it permissible for two or more rooms to share a toilet? Providing a dedicated toilet for each procedure room has cost and space implications.

OFFICIAL RESPONSE

A toilet room shall be directly accessible from each procedure room without entering the corridor or other space within a suite. The choice of whether the toilet room can be shared by multiple procedure rooms is up to the designer and the clinical program.

Further comments

Two authorities having jurisdiction served on the six-person committee that considered this question, and both indicated their states have waived the direct accessibility requirement where procedure rooms are associated with a renovation program and compliance is difficult and cost prohibitive. In all cases, however, a patient toilet room must be contained in the suite, nearby, and accessible without having to enter a public corridor.

REQUEST

Guidelines edition: 2001 Paragraph reference: 7.10.H5

Question: A small renovation to the cardiac catheterization lab in a hospital involves renovation to the clean room and the addition of scrub facilities. Is it permissible to locate the scrub facilities in the clean workroom or clean supply room?

OFFICIAL RESPONSE

No. Per 7.10.H1 of the Guidelines, an “appropriate sterile environment” must be provided, and scrub facilities need to be arranged to minimize incidental splatter on nearby personnel, equipment, or supplies. This suggests that splatter is undesirable/not sterile, and the clean workroom/supply room is required to store supplies and equipment. In addition, the location of a scrub sink in this area is inconsistent with the programmed use/intent for this space.

Further comments

The members of the Interpretations Committee added these comments to the "official" response. They are not to be considered as part of the formal interpretation but rather as explanatory information only.

Authority Having Jurisdiction

Absolutely not, the clean workroom should be just that, CLEAN! No matter how careful the staff is, there will be splatter and moisture from the scrub area.

Architect and M.D.

Simple answer is no! Real answer is I've seen it done more than once, so I guess it is 'permissible' in some states or the AHJ has waived the Guidelines recommendations. In my opinion, it is just a terrible idea and as we've talked about splatter, and problems with dampness and contamination, this design would make a mockery of the concept of a “clean” workroom or supply room.

Infection Control Professional:

No, we have worked years to separate these areas because of logistics, traffic, and splashing, even if equipment was only being decontaminated.. Truly mixing up clean and soiled—just a bad idea.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.12.C**

Question: Does paragraph 7.12.C indicate a laboratory handwashing sink may be used/shared for disposal of liquid wastes?

OFFICIAL RESPONSE

The Guidelines as written are clear in their current intent, allowing the use of handwashing sinks in laboratories for other purposes.

Despite this, please consider the comments and opinions of the interpretations committee given below.

Further comments

The following opinions reflect changing views in infection control policy. While they are not a part of the current edition of the Guidelines, it is anticipated these issues will be discussed at length during the 2005 revision process.

State AHJ

This is one of those situations where the wording in the Guidelines has been the same for a number of years. ***We now know better and should change the wording to specify sinks for the exclusive use of handwashing.*** In addition, wording should include a requirement for posted warnings instructing staff the sinks are for handwashing purposes only and not for disposal of liquids.

In our state, we have been requiring and enforcing the use of handwashing sinks that are separate from the laboratory sinks used for disposal of blood products, low-level radioactive materials, and chemicals used in testing. We have, however, allowed eyewash units to be placed in the handwashing sinks. As in dietary units, we expect these handwashing sinks to be conveniently and strategically placed for ease of use.

In addition to handwashing sinks, most laboratory designs include cup sinks and disposal sinks, including clinical service sinks in the glass washing and sanitizing rooms. Specialty sinks are also included in hood units.

Infection Control Professional

I fully concur with the concerns, but think it is difficult to legislate good practice. I think the current statement re: nontoxic disposal is correct. Well designed labs I've seen in hospitals usually DO have a specific handwashing sink in addition to the standard countertops for staining, etc. Most of the issues identified by the requester are ones of practice, but I think the Revision Committee should look at what is recommended as good lab design.

A reference to consider in establishing good lab practice is NCCLS Document GP18-A *Laboratory Design; Approved Guideline*. This document provides basic information about nonstructural laboratory design elements, including space, casework and furniture, storage, ventilation, lighting, and fresh and waste water. The National Committee for Clinical Laboratory Standards (NCCLS) is a global organization that develops consensus documents for audiences beyond the clinical laboratory community.

State AHJ

This is a case where industry practice and other standards exceed the minimum in the Guidelines.

Paragraph 7.12.A does use the plural terms "sinks"; therefore, I expect at least two sinks in a lab. Enclosed towel dispensers are required by Guidelines paragraph 7.28.A17.

I agree that good advice would be to have separate sinks for handwashing and waste disposal. OSHA regulations require separation of all bodily waste. OSHA 1910.1030(d)(2)(iii) requires handwashing sinks where blood is handled. Other bodily fluids are also categorized as "regulated waste." The common practice is to provide special sinks for waste and acid disposal in labs.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.28.B9**

Did this question arise from an actual field situation? Yes.

State the purpose of your request for formal interpretation: [Our state] has no AHJ who can provide an interpretation on this issue.

Question: Protective isolation rooms are required to have monolithic ceilings. Can a Class 100 clean room ceiling system be considered an equivalent of a monolithic ceiling if the hospital follows protocols such as those just below to maintain the integrity of the system?

- Follow the maintenance protocols specified in the upcoming CDC Environmental Infection Control Guidelines.
- No maintenance activity of any kind will be performed above the ceiling while a patient is in the room.
- The hold-down clips will be replaced after any work, per protocols.
- The room will remain vacant for a period of time (length to be determined by our infection control officer) after completion of ceiling maintenance activities in order to purge the room of leftover airborne contaminants.

OFFICIAL RESPONSE

The short and quick answer to your question is that monolithic ceilings are intended to be joint and seam free, which would mean a gypsum board (drywall) or plaster ceiling. The issue of access panels and gasketing should be handled by the architects, engineers, and facility managers involved with the design of the unit.

Now, for the long answer: While all of the interpretation committee members knew the answer to be a hard ceiling as stated above, the majority of them also thought the ceiling being recommended—Armstrong's clean room ceiling assembly that meets the requirements for a Class 100 System—should be considered equivalent on a case-by-case

basis. The reason for not accepting this system for universal equivalency is that maintenance and infection control practices have to be diligently followed when systems such as these are installed. So, all but one of the AHJs polled thought they would permit this system if the procedures outlined in the requestor's letter were followed and documented.

Further comments

Listed below are portions of the interpretation responses received; they should be helpful in making the decision to request equivalency from the [state] authority having jurisdiction.

State AHJ

We have allowed, under close control by infection control and maintenance staff, for substitution of clean room technology for a monolithic ceiling where such a ceiling was not practical. However, we required a higher level of documentation regarding policy and procedures and required the infection control committee to make this a continuing part of their inspection, monitoring, and documentation with the stipulation that if any unresolved infection control issue was traced to the clean room type ceiling, the hospital would have to replace the CR ceiling with monolithic, caulk, seal, etc. Since the track may have some small crevices even with gaskets, a more frequent ceiling surface cleaning schedule should be implemented and a thorough cleaning of the ceiling and room should be carried out after any maintenance if they are allowed to use the CR-type ceiling.

I would support an equivalency under the conditions proposed by the applicant and as stated above if the hospital's chief of oncology, head of infection control, risk manager, and engineer all signed off on the equivalency and would at least provide reports to the AHJ comparing the IC rate before and after installation (with monolithic vs. clean room type). Regular reviews of all aspects of the equivalency should be revisited by the abovementioned team on a regular basis, especially if new personnel (on the team) are brought in. See A1.6.C. Equivalency.

Architect

In the past I have interpreted the concept of the smooth/washable ceiling system to mean a drywall or plaster system, which is consistent with the discussions we had regarding this topic in Denver [during the revision cycle resulting in the 2001 edition]. I must say I am intrigued by the concept of using a system designed for a clean room. Given the strict requirements for air quality in these environments, I would expect the system should work in a bone marrow transplant unit. I have no objections to considering this "technological advancement" in ceiling construction for the health care environment. How it is tested to ensure patient safety is my main question/concern.

Infection Control Expert

I'm approaching the question from the desired outcome and, if I understand correctly, both designs CAN provide the outcome of maximum sealing to prevent infiltration of

bioparticulates. The underlying principle is provision of a tight room seal considering all sources of leakage—doors, recessed lights, cover plates, etc., as well as fungi that could develop from other water leaks and moisture and penetrate unsealed areas.

A monolithic ceiling can be ineffective if not sealed and gasketed properly, but I see its installation as increasing the odds of the desired outcome. Therefore, I see this requirement as optimizing the outcome (no dust/no fungi/no aspergillosis or other fungal infections) with minimal risk of leakage AFTER the owner has verified the ceiling has been installed properly.

Although I know one state permits clipped down ceilings on occasion, the AHJ has decided on a case-by-case basis since there is such variation in design space, maintenance, and other support staff. Prevention of aspergillosis in bone marrow transplant patients has been proven IF all systems are working. It seems to me one pays for minimizing the risk up front or for problems later. The commitment to monitoring and cleaning (availability and concomitant costs for physical plant, environmental services, and infection control staff for infection surveillance) for a clipped down ceiling has to be balanced against maintenance of a room with maximum sealing (properly installed and sealed from the start). I don't think health care organizations typically have the funds to maintain clean rooms in the same manner the pharmaceutical industry does. The questioner's institution is making that commitment.

Bottom line, I believe it was the intent of the Guidelines Revision Committee to assure maximum seal as a minimum requirement; I think variances should continue to be handled on state-by-state/case-by-case review so that all factors can be considered.

State AHJ

In my opinion, a monolithic ceiling was specifically called for in the reference paragraph and not a gasketed or clipped down lay-in ceiling. Lay-in ceilings with clips have historically been seen as a maintenance problem and over a period of time do not maintain the same protection that is afforded by a uniform, monolithic ceiling of drywall or plaster. Access panel(s) are easily installed to service piping. In accordance with NFPA 70-517, all critical branch circuits must be in rigid conduit. Other piping should be kept to a minimum above these ceilings. I do not think it was the intent of the committee to approve other types of ceilings.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **7.32.G1**

Question: According to 7.32.G1, "In patient areas, each patient room shall be served by at least one calling station for two-way voice communication. Each bed shall be provided with a call device...." We are designing a hospital that has 2 patient beds and 2 exam beds in the emergency room area. If we were to install a staff/duty station at each bed, would

that satisfy the criteria of 7.32.G1? Or are we required to have a patient bed call station (thumb button) in addition to the staff/duty station?

OFFICIAL RESPONSE

In accordance with 7.32.G1, “each patient room shall be served by at least one calling station for two-way voice communication. Each bed shall be provided with a call device. Two call devices serving adjacent beds may be served by one calling station.” Therefore, in the scenario you describe, if the beds are adjacent to each other, you would need at least one station for two-way communication (must be within a radius of the patient’s head that makes verbal communication possible) and each bed would need to have a call device (pushbutton or similar device) to summon assistance. A staff/duty station at these bed locations would not serve the same function.

Further comments

The following commentary by members of the Interpretations Committee is intended to give insight into why this interpretation was rendered. It is provided for informational purposes only and should not be considered a part of the formal interpretation.

Staff/duty stations are not always "occupied," nor does an emergency department necessarily fill the line of site aspect of an ICU. As always, the issue is the patient. In some instances a patient may be alone for a period of time, not directly monitored by staff and electronics, and may need to use the call button to request assistance. These patients could easily be waiting for observation, waiting for another physician, etc., and while no one is observing them need to summon assistance as a condition gets worse or other pain is felt. Design considerations for the installation of nurse call systems in emergency rooms are similar to those for standard inpatient beds rather than for beds in an intensive care unit.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **Table 7.2**

Question: Table 7.2, Ventilation Requirements, calls for a minimum of six (6) total air changes per hour in patient rooms, and footnote number 16 on page 81 speaks of reducing the total minimum air change rate in a patient room from 6 to 4 when supplemental heating and/or cooling systems are used. In such an instance, it seems that the centrally ducted system should provide air at a rate equating to 4 air changes per hour. Our questions are as follows. Does a fan coil unit qualify for anything in the air change rate computation? For instance, if the fan coil unit circulates (recirculates) air in a patient room at a rate of 4 ACH, so long as our centrally ducted system provides 2 ACH, will we have satisfied the *Guidelines*? If not, what is expected of such a system with fan coils in patient rooms?

OFFICIAL RESPONSE

The use of fan coil units in patient rooms is not disallowed by the Guidelines if this system of fan coil/central air meets the intent behind the 6 air change requirement.

Further comments

This question is made difficult by the fact that none of the writers of the Guidelines would approve or advocate a fan coil unit in a patient room, even though these are not disallowed by the current and past editions of the Guidelines. However, if an authority having jurisdiction were to approve the use of a fan coil unit in the room, and ask whether this system of fan coil/central air met the intent behind the 6 air change requirement, the response would be that the system as described conforms to the ventilation requirements of Table 7.2 and note 16 of Table 7.2. This assessment is valid only if the fan-coil unit fan is operated on a continuous basis.

The increase of the “Minimum Total Air Changes per Hour” for patient rooms to 6 ACH is based on research and experience showing that 2 ACH resulted in noticeable stratification of the air in the room. This makes the room uncomfortable. The research indicates that supplemental heating or cooling should provide additional mixing of the 4 ACH supplied to a patient room sufficient to be equivalent to the mixing provided by 6 ACH. Note that the minimum outside air ventilation rate of two air changes per hour, contained in Table 7.2, must be maintained under all circumstances.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **Table 7.2**

Question: Should the airflow always be from the operating rooms to all adjacent areas, or can the ventilation system be balanced so the sterile core is positive to the adjacent operating rooms?

OFFICIAL RESPONSE

Table 7.2 indicates that the OR shall be positive to adjacent spaces and rooms. There are no exceptions to this recommendation listed in the Guidelines, and therefore the airflow must be positive from the OR to the sterile core. The intent is to provide the OR with the cleanest possible filtered air.

Further comments

The members of the Interpretations Committee added these comments to the "official" response. They are not to be considered as part of the formal interpretation but rather as explanatory information only.

Authority Having Jurisdiction

To my knowledge we have always considered the actual OR to be the most sterile environment; the final act of infection control occurs when the doctor, after having scrubbed, is finally gowned and gloved in the OR room. Cross-traffic from multiple ORs and supply functions, with multiple personnel entering and leaving ORs during operations, somewhat compromises the OR corridor. While it is a reasonably sterile environment, the corridor is not perceived to be of equal sterile quality to the OR itself. We have always insisted by rule that the OR have positive pressure to the OR corridor; the corridor can still be positive to areas surrounding the corridor. OR= P+; sterile corridor = P; outside the red line can be neutral or P- (P minus) to the sterile corridor.

Mechanical Design Engineer

I've always expected that the OR (where the patient is) would be the cleanest area, and therefore, the most positive.

Mechanical Engineer with the Public Health Service

Table 7.2 indicates the OR should be positive to adjacent spaces/rooms. The intent is to provide the OR with filtered supply air via the air handling system.

Health Care Environmental Specialist

ORs are the cleanest environment and should always have the air flow out of them. This is a difficult balance in many places, but it makes sense because of the other functions that go on in the clean core. Most sterile is a weird phrase because sterile is the absence of life, so we should expect cleanest, cleaner, and clean. ORs should always be pressurized during procedures due to the sensitive work being done there. From my experience, the processing going on in clean core is less critical than the work being done in the ORs.

Mechanical Engineer with the Army Corps of Engineers

My initial response is that the OR should always be positive to any adjoining space. Certainly this would be true for such "clean/sterile core" constituent elements as the sterile corridor, scrub station, sterilizer room, etc.

Authority Having Jurisdiction

For an operating room, Table 7.2 on page 79 of the Guidelines states that air movement to adjoining areas is to be "out." I believe that would mean to all adjoining spaces, regardless of what they are.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **Table 7.2**

Question: Chapter 7, General Hospital, notes a design temperature range for patient rooms between 70 and 75 degrees. The footnote also notes, "Where temperature ranges are indicated, the systems shall be capable of maintaining the rooms at any point within the range during normal operation...."

- 1) Does this indicate that if a thermostat set point is set for 73 degrees, the patient room must be at 73 degrees?
- OR
- 2) Does this mean that as long as the patient rooms are within 70-75 degrees, this meets the intent of the footnote, even if the thermostat is set for 69 or 76 degrees?

OFFICIAL RESPONSE

The recommendations in Table 7.2 for the HVAC system(s) and control(s) serving patient rooms is for the system(s) to be able to provide any temperature set point within the range specified within the controlling device's tolerance of accuracy, which is typically $\pm 2^{\circ}\text{F}$.

Question #1: "Does this indicate that if a thermostat set point is set for 73 degrees, the patient room must be at 73 degrees?"

Yes, if the thermostat is the controlling device of the system(s), it shall be located in such a position to accurately sense the room temperature within $\pm 2^{\circ}\text{F}$.

Question #2: "Or does this mean that as long as the patient rooms are within 70-75 degrees, this meets the intent of the footnote, say even if the thermostat is set for 69 or 76 degrees?"

No, any set point within the range given should be able to be maintained within the tolerance of the controlling device, not just maintained within the range. Although the actual reading on the thermostat may not matter, the room space must be able to be maintained at *any* point between 70 and 75 degrees.

Further comments

The members of the Interpretations Committee added these comments to the "official" response. They are not to be considered as part of the formal interpretation but rather as explanatory information only.

Authority Having Jurisdiction

I would say that the actual temperature is what we are looking for; the thermostat setting number has nothing to do with actual conditions. We all have seen numerous t-stats that are way off calibration. My personal experience as a former HVAC tech and startup/warranty person is that the contractor and design engineer should have the t-stats calibrated within a reasonable range ($\pm 2^{\circ}\text{F}$) so the end user perception is better and complaints will be reduced.

Mechanical Design Engineer

Thermostat setting is immaterial. The requirement is for the HVAC system to maintain room temperature at any point in the indicated range. It is not sufficient simply for the room temperature to be maintained within the range. The intent is that staff would have the flexibility to select the appropriate room temperature.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **Table 7.2, note 8**

Question: Language has been added to Table 2, note 7 in the 1996-97 edition to create Table 7.2, note 8 in the 2001 edition. The new sentences read, "The maximum and minimum limits are not intended to be independent of a space's associated temperature. The humidity is expected to be at the higher end of the range when the temperature is also at the higher end, and vice versa."

If you read this note literally, when the space temperature is at 68°F the relative humidity should be 30%, and when the space temperature is at 73°F the relative humidity should be 60%. This does not seem practical; it would be difficult to achieve the lower temperatures and humidities (68°F and 30% RH) in the summer months. Is the intent of the revision to this note to require that when the ambient temperature is at the higher end, the space's relative humidity would also be at the higher end of the range and vice versa?

OFFICIAL RESPONSE

No, the intent was to allow some flexibility for the hospital when the outside ambient temperature and humidity are at the high end of summer design temperature and humidity. In a humid climate and at the higher outside ambient ranges, it is not possible to achieve the lower end of the space humidity range without the very expensive option of "sub-cooling and re-heating."

Further comments

Your question points out an improperly worded and overly restrictive requirement in the Guidelines. The following suggested new language is offered for consideration of a revision to Note 8 in the next Guidelines revision cycle: "The ranges listed are the minimum and maximum limits where control is specifically needed. The design shall provide provisions (e.g., humidification, dehumidification, etc.) to maintain a relative humidity at any point in this range."

I believe the intent is to make sure that when one of the parameters is at the high end the other can be maintained somewhere within the published range. If the other is true and when the temperature is at the low end and the humidity needs to be at the high end, we would also have a technological challenge that could be extremely difficult to achieve without extensive resources.

REQUEST

Guidelines edition: 2001 Paragraph reference: Table 7.3

Question: Regarding Table 7.3, Filter Efficiencies for Central Ventilation and Air Conditioning Systems in General Hospitals, is it the intent of the Guidelines to require two filter beds of 30% and 90% for patient care areas? Do the Guidelines permit a less efficient filter for the prefilter as long as collectively the overall efficiency reaches 90%?

Also, your guidelines reference ASHRAE 52.1 but do not mention the new ASHRAE test method 52.2. Does the fact that your guidelines do not mention ASHRAE 52.2 mean we should only consider ASHRAE 52.1 in determining filter efficiencies?

OFFICIAL RESPONSE

In 1997 the filter efficiency of filter bed no. 1 was changed from 25 to 30 in Table 3, “Filter Efficiencies for Central Ventilation and Air Conditioning Systems in General Hospitals and Psychiatric Facilities.” This change was made because the Guidelines Revision Committee was under the impression that 25% prefilters were no longer being manufactured and the filter industry had standardized around 30% efficiency.

The use of a prefilter that is less than 30% would be permissible as long as the final filter (90%) was being protected and was not loading up at an unrealistic rate. The use of prefilters between 25% and 30% should be evaluated by the authority having jurisdiction for overall system performance to prevent excessive clogging of the final filter.

The filter efficiencies in Table 7.3 are not additive and the final filter has to be rated at 90% (ASHRAE atmospheric dust spot efficiency) or above.

As for the latest ASHRAE testing standard, our citation of ASHRAE 52.1 reflects that filter manufacturers continue to list (in their literature) filter efficiencies based on ASHRAE Standard 52.1, sometimes in addition to the efficiency based on ASHRAE Standard 52.2.

REQUEST

Guidelines edition: 2001 Paragraph reference: Table 7.5

Question: Specifically, what is the purpose for the medical air and oxygen requirements for an anesthesia workroom? Can a portable oxygen tank meet the requirement for oxygen?

OFFICIAL RESPONSE

The requirement for having medical gas outlets in anesthesia workrooms comes from the need to calibrate and test anesthesia equipment. A common misconception is that the medical air is for blowing down and drying anesthesia equipment, but this is a misuse of the medical air system and not permitted by NFPA 99, Chapter 4 on Piped Gas Systems.

According to the 1996-97 and 2001 editions of the Guidelines, the need for piped medical air and oxygen outlets in anesthesia workrooms is mandatory at a level of one per workstation. This is not open for interpretation as it is well-defined in Table 7.5; therefore, the use of portable oxygen and medical air cylinders is not considered equivalent.

Further comments

Having made the statement that these gases need to be piped into this workroom, the members of the Health Guidelines Revision Committee who were polled all agreed that there was no need for these outlets. They further agreed that the use of portable cylinders is perfectly adequate to meet the needs of the anesthesiologist or biomedical technician if these gases are needed for calibration. With this opinion of the interpretation group, a proposal will be made for the 2005 edition to remove this from Table 7.5.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **Table 7.5, line 7.8.A4, footnote 5**

Question: In reviewing the guidelines for labor/delivery/recovery postpartum (LDRP) rooms, I came across an apparent inconsistency. Table 7.5, line 7.8.A4, note 5 indicates 2 oxygen, 2 vacuum, and no medical air station outlets for mother and bassinet. This would result in a total of four oxygen and four vacuum outlets for the entire room. However, a cesarean/delivery room (line 7.8.A3) requires 2 oxygen outlets, 3 vacuum outlets, and 1 medical air outlet for the entire room. The infant resuscitation station (line 7.8.A3.c) requires 1 oxygen outlet, 1 vacuum outlet, and 1 medical air outlet.

Can you explain why there is a requirement for 2 oxygen and vacuum outlets at the bassinet in an LDRP instead of the 1 required for the infant resuscitation station? Also, I am not sure I understand the requirement to have two oxygen outlets available for the mother.

OFFICIAL RESPONSE

It appears as if the Guidelines are in fact inconsistent and there needs to be a modification of Table 7.5 and footnote 5. While this change cannot take place for the 2001 edition we will make sure that a committee-generated proposal is issued for the 2005 edition. The

modification being proposed will change the recommendations for medical gas and suction in LDRs and LDRPs to:

Head of the Patient Bed

Oxygen 1/bed

Vacuum 1/bed

(deletion of the footnote to increase these numbers to two per bed)

Infant Resuscitation Unit

Oxygen 1/bed

Medical Air 1/bed

Vacuum 1/bed

(no additional outlets will be required for this unit)

Further comments

The members of the Interpretations Committee added these comments to the "official" response. They are not part of the formal interpretation but are offered as explanatory information.

Authority having jurisdiction

The labor/delivery/recovery/postpartum rooms are intended for scheduled deliveries of healthy mothers. Most cesarean sections are scheduled in advance and involve complicated cases. The screening process for the use of the LDR and LDRPs should reduce the need to perform cesarean deliveries in these rooms.

Facility manager

The absence of a requirement for medical air in these rooms is deliberate, since they are not intended to be used for cesarean deliveries. If an emergency were to occur and a cesarean delivery became necessary, an operating room or cesarean delivery room is required to be located close to the LDRP so the patient can be immediately relocated to this room, which is properly equipped for cesarean delivery. Or, in an extremely rare case, a portable medical air device could be brought into the LDRP if needed to assist in the emergency surgery.

It is my opinion that the requirement of two oxygen and vacuum for a bassinet is unnecessary. The issue has been covered with the "infant resuscitation station." The infant

resuscitation station requirements of 1/1/1 should cover the worst case scenario for the infant/bassinet.

Neonatologist

There is a rationale for requiring medical air in the infant resuscitation station in the cesarean/delivery room and not in the LDRP: Since higher risk deliveries occur in the former, the use of blended O₂/air is desirable.

As I understand the question, the outlets specified in Table 7.5 have to do with the need for a second O₂ and vacuum for the infant in an LDRP. One O₂ is needed to provide oxygen to the baby, either directly or through a resuscitation bag; another O₂ is needed for the mother. One suction is needed to provide wall suction for oral or endotracheal suctioning; there are rare circumstances when a second might be desirable (so one could suction the stomach at the same time as the airway, for example), but this would be OK if there were a second suction available somewhere in the room, so if there are at least two for the mother, one for the bassinet in an LDRP would be an acceptable minimum (obviously, having two per bassinet still makes more sense whenever possible). Therefore, using the infant resuscitation station numbers of one O₂ and one suction in an LDRP would be acceptable clinically and I would think the next Guidelines revision could/should clarify this for folks.

It appears that "duplication" for the baby's med gases is implied in the footnotes, but I don't recall that the intent was to duplicate gases for the infant as a minimum standard. Perhaps the situation occurred when we added specific language for the infant resuscitation area.

Facility planner

I think the proposed change to the 1996-97 version was to discourage the use of the outlets on the mother's headwall for the infant, since it is difficult to resuscitate an infant using outlets at the mother's head. The point was to have a place with outlets "designated" for the infant in the room, not to provide duplicate outlets for the newborn.

While it is true that some hospitals choose to add more medical gases in their LDR/LDRPs for twins or add extra suction for the newborn, most hospitals use portables in the LDR/LDRP or a cesarean delivery room when these cases occur. Adding more medical gas outlets should not be prohibited, especially in high risk birth services, but this is beyond the minimum standard, in my opinion.

Regarding the mother's outlets, most hospitals only have one set for mom unless they are using a converted semi-private room. One set for mom seems to have worked as a minimum standard for many years, unless some new clinical research has emerged on this topic that I haven't heard about.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **8.31.D**

Did this question arise from an actual field situation? No.

or from discussion(s) with an authority having jurisdiction (AHJ)? Yes.

Question: Was it the intent of the authors to have Chapter 8.31.D3 in the 1996-97 edition of the *Guidelines for Design and Construction of Hospital and Health Care Facilities* and in the recently published 2001 version, which appears unchanged, apply to gas-fired packaged terminal air conditioners?

OFFICIAL RESPONSE

Section 8.31.D in Guidelines 2001 clearly states that the non-central air-handling systems as described in your request are permissible in nursing facility applications. The filter requirements of Table 8.3 (two filter beds of 30% and 80%) must be met for new installations.

Further comments

The use of the gas-fired systems as detailed in your letter are only permissible in those facilities covered by Chapter 8 of the Guidelines. All of the other occupancy chapters clearly state that a central ventilation system shall be installed. There was tremendous debate by the Health Guidelines Revision Committee this past cycle about deleting the permissive language and requiring all newly installed ventilation systems to be central and have the proper filter efficiency requirements. This proposal did not pass and the existing language from the 1996-97 edition was retained.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **9.5.F2**

Question: Did the Health Guidelines Revision Committee intend to specify mixing of OR classes for freestanding ambulatory health care facilities, or must all of the ORs have the same classification?

OFFICIAL RESPONSE

It was not the intent of the Guidelines Revision Committee to limit the classifications of operating rooms (ORs) to one level of care. A mixture of Class A, B, and C facilities is permitted in freestanding facilities.

Further comments

- The classification system of operating rooms in the Guidelines was set up so that an ASC facility could have different levels of operating service, which also correlates to different OR room design requirements as outlined in 9.5.F2.

As long as the designation as to what level of care can be carried out in given rooms is clear, there should be no problem with having some rooms strictly for local cases, some for MAC, and some for general anesthesia.

There is no intention to restrict facility development to a single class of surgical facility. While the most stringent/complex Class C OR would be able to accommodate Class A and B procedures as well...any decision to maximize efficiency and use of each room should be made on an individual project-by-project design and operational (and probably \$\$\$\$) basis.

- 9.5.F2.1 regarding Class A Operating Rooms says, "These minor surgical procedure rooms may be located within the restricted corridors of the surgical suite, or may be located in an unrestricted corridor adjacent to the surgical suite." Clearly this section recognizes that there may be minor procedure rooms like this in addition to those that need to be located within a full-blown surgical suite. The intent appears clear...minor and major procedure rooms may be provided at one single site. Similar language is provided for Class B rooms...and the same argument applies.

REQUEST

Guidelines edition: 2001 Paragraph reference: 9.5.F2

Question 1: A minimum clear space of 4 feet around an operating table is a very comfortable operating space, and it is the one recommended by the AAAASF (American Association for Accreditation of Ambulatory Surgery Facilities). Does the Health Guidelines Revision Committee find it necessary to have square footage in an operating room above and beyond the clear space around the operating table as defined by AAAASF? That is, are the clear spaces of 13 x 9 feet for Class B and 14 x 10 feet for Class C sufficient for ambulatory OR room sizes?

Question 2: Is the minimum clear dimension—15 feet for Class B and 18 feet for Class C—measured in one direction or is it a minimum for the length and the width?

Question 3: Do door swings count as infringement on clear space?

OFFICIAL RESPONSE

To Question 1: Through the consensus process, the Health Guidelines Revision Committee (HGRC) has debated the size of operating rooms during many revision cycles.

The thoughtful input of members of the American College of Surgeons, the American Medical Association, the Association of Operating Room Nurses, and other professionals with expertise in the design and functionality of operating rooms has been part of this debate. As a result of this open forum process, the values were set by consensus of the HGRC at those contained in the 2001 edition of the document. Thus, the answer to your question is yes, the Guidelines do mandate operating rooms larger than the dimensions you stated.

The size of an OR is determined by more than the minimum space between the sides or head/foot of the table. When the HGRC debated OR room size, there was considerable discussion of the need for adequate space to support portable equipment, consultative staff, surgical equipment that extends beyond the table dimension, etc. The minimum distance from the table to the walls was provided by the AAAASF for those designs that have the table offset to one side of the room and therefore need to have a minimum dimension established.

To Question 2: It is a minimum room dimension as measured in either the length or width of the room. Therefore, a Class B room must have a minimum room size of 15 feet x 16.66 feet and Class C rooms must measure a minimum of 18 feet x 22.22 feet.

To Question 3: No, door swings are not considered in determining minimum clear area.

REQUEST

Guidelines edition: **2001** *Paragraph reference:* **11.2.C**

Question: Is it acceptable according to Section 11.2.C, Seclusion Treatment Room, to combine the toilet room and anteroom into a single anteroom/toilet? The section says, "Seclusion treatment rooms shall be accessed by an anteroom or vestibule that also provides direct access to a toilet room. The toilet room and anteroom shall be large enough to safely manage the patient." To me, this wording implies that the toilet room and anteroom are two separate rooms. My client is proposing a design that combines the two into a single anteroom/toilet room.

OFFICIAL RESPONSE

It is the intent of the Guidelines Revision Committee for 11.2.C to require that the anteroom, seclusion room, and toilet room be three separate and distinct rooms. The anteroom shall provide access to the toilet room and the seclusion room. Please note that the standard also states, "The toilet room and the anteroom shall be large enough to safely manage the patient." This too implies the committee's intention for the anteroom and toilet room to be separate rooms.

Further comments

- Seclusion rooms in psychiatric units are intended for short-stay use. They are commonly labeled time-out rooms. The seclusion rooms are used to provide an environment with a minimum of sensory stimulation to the resident. The residents using these rooms are in most instances in a state of excitement that could prove harmful to themselves if not properly controlled. The absence of stimulus helps soothe the patient and restore some balance. Often the patients require restraints in addition to placement in the seclusion room.
- The anteroom of the seclusion room is intended to serve in a manner similar to that of a sally port in a penal institution. It provides a secure area where staff can secure the corridor door before entering the seclusion room for patient treatment. The anteroom is intended as a safety net for both the patient population and the staff, protecting them from the patient requiring seclusion.
- The bathroom serving the seclusion room is a separate room and is accessed from the anteroom. Traditionally, this design is intended to eliminate the possibility of the secluded patient accessing the bathroom while unsupervised and using the bathroom for hiding or potentially harming himself or herself.
- The creation of a combination anteroom/bathroom in the same room presents some serious security problems, since the patient being secluded, already in a state of excitement, might utilize the handholds available via the exposed fixtures to resist being placed in the seclusion room. In addition, the fixtures themselves present a potential source of injury for the staff and patient if a scuffle should occur while attempting to place the patient in the seclusion room.