

BSR/ASHRAE/ASHE Addendum m to ANSI/ASHRAE/ASHE Standard 170-2021

Public Review Draft

Proposed Addendum m to Standard 170-2021, Ventilation of Health Care Facilities

First Public Review (February 2024)
(Draft shows Proposed Changes to Current Standard)

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(This foreword is not part of this standard. It is merely informative and does not contain requirements necessary for conformance to the standard. It has not been processed according to the ANSI requirements for a standard and may contain material that has not been subject to public review or a consensus process. Unresolved objectors on informative material are not offered the right to appeal at ASHRAE or ANSI.)

FOREWORD

Proposed Addendum m revises Tables 7-1, 8-1, 8-2 and 9-1 to incorporate types of room units that are allowable for each space type. This will provide clarity and consistency within this standard. Addendum h also modifies text within Sections 8.1 and 8.2 that is associated with unoccupied turndowns. This addendum comprises the following general edits:

- New definition for room unit.
- Revisions to Tables 7-1, 8-1, 8-2 and 9-1 modifying the general requirement for recirculating room units to align with the definition and specify the type of room unit allowable in each space.

Revisions to the requirements for air change rate provisions with respect to room units.

[Note to Reviewers: This addendum makes proposed changes to the current standard. These changes are indicated in the text by <u>underlining</u> (for additions) and strikethrough (for deletions) except where the reviewer instructions specifically describe some other means of showing the changes. Only these changes to the current standard are open for review and comment at this time. Additional material is provided for context only and is not open for comment except as it relates to the proposed changes.]

Addendum m to 170-2021

Add the following new definition to Section 3 as shown. The remainder of Section 3 is unchanged.

room unit: a fixed piece of equipment or system of equipment providing supplemental heating, cooling, filtration, or combination thereof, serving a single space.

- Type A is a room filtration unit with HEPA filtration.
- Type B is a room filtration unit minimum equivalent filtration efficiency as designated for each space by this standard.
- Type C is a room unit with a heating coil and/or a dry-air cooling coil.
- Type D is a room unit with a heating coil and/or wet-air cooling coil.

Revise Section 7.1.a.5 as shown. The remainder of Section 7.1 is unchanged.

7.1 General Requirements. ...

a. Spaces shall be ventilated according to Table 7-1.

- 5. For spaces where Table 7-1 permits air to be recir.
- 5. For spaces where Table 7-1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating *room* HVAC-units. Such recirculating *room* HVAC-units shall
 - i. not receive nonfiltered, nonconditioned outdoor air;
 - ii. serve only a single space; and

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iii. provide a minimum MERV 8 filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface so that all of the air passing over the cold surface is filtered.

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Revise Table 7-1 and notes as shown below.

Table 7-1 Design Parameters—Inpatient Spaces

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Recirculated by		Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (I). °F/°C
NURSING UNITS AND OTHER PATIENT CARE AREAS					,				
AII anteroom (FGI 2.1–2.4.2.3) (u)	(e)	NR	10	Yes	NoA	Yes	MERV-8	NR	NR
AII room (FGI 2.1–2.4.2) (u)	Negative	2	12	Yes	NoA	Yes	MERV-14	Max 60	70-75/21-24
Cesarean Delivery room (FGI 2.2-2.9.11.1) (m), (o)	Positive	4	20	NR	NoA, B	Yes	MERV-16	20-60	68-75/20-24
Combination AII/PE anteroom (FGI 2.2-2.2.4.5)	(e)	NR	10	Yes	No <u>A</u>	No	HEPA	NR	NR
Combination AII/PE room (FGI 2.2-2.2.4.5)	Positive	2	12	Yes	No <u>A</u>	No	HEPA	Max 60	70-75/21-24
Continued care nursery (FGI 2.2-2.10.3.2)	N/R	2	6	N/R	NoA, B	Yes	MERV-14	30-60	72-78/22-26
Critical care patient care station (FGI 2.2-2.6.2)	NR	2	6	NR	NoA, B	Yes	MERV-14	30–60	70-75/21-24
Emergency department exam/treatment room (FGI 2.2–3.1.2.6 & 2.2–3.1.3.6) (p)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes (ff)	MERV-14	Max 60	70–75/21–24
Emergency department human decontamination (FGI 2.2–3.1.3.6[8])	Negative	2	12	Yes	No	Yes (ff)	MERV-14	NR	NR
Emergency department public waiting area (FGI 2.2–3.1.2.4 & 2.2-3.1.3.4)	Negative	2	12	Yes (q)	NR <u>A, C, D</u>	Yes (ff)	MERV-8	Max 65	70–75/21–24
Emergency department trauma/resuscitation room (FGI 2.2–3.1.3.6[4]) (c)	Positive	3	15	NR	<u>NoA, B, C, D</u>	Yes	MERV-14	20–60	70–75/21–24
Emergency service triage area (FGI 2.2-3.1.3.3)	Negative	2	12	Yes (q)	NRA, C, D	Yes (ff)	MERV-8	Max 60	70-75/21-24
Intermediate care patient room (FGI 2.2–2.5) (s)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV-14	Max 60	70-75/21-24
Labor/delivery/recovery (LDR) (FGI 2.2-2.9.3) (s)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV-14	Max 60	70-75/21-24
Labor/delivery/recovery/postpartum (LDRP) (FGI 2.2–2.9.3) (s)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV-14	Max 60	70–75/21–24
Laser eye room (FGI Table T2.2-1)	Positive	3	15	NR	NoA, B	Yes	MERV-14	20–60	70-75/21-24
Neonatal intensive care (FGI 2.2–2.8)	Positive	2	6	NR	NoA, B	Yes	MERV-14	30–60	72-78/22-26
Newborn nursery (FGI 2.2–2.10.3.1)	NR	2	6	NR	NoA, B	Yes	MERV-14	30–60	72-78/22-26

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Nourishment area or room (FGI 2.1–2.8.9)	NR	NR	2	NR	NRA, B, C, D	Yes	MERV-8	NR	NR
Nursery workroom (FGI 2.2–2.10.8.5)	NR	2	6	NR	NoA, B	Yes	MERV-8	Max 60	72-78/22-26
Operating room (FGI 2.2–3.3.3) (m), (o)	Positive	4	20	NR	NoA, B	Yes	MERV-16 (hh)	20-60	68-75/20-24

Table 7-1 Design Parameters—Inpatient Spaces (Continued)

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)		Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)			Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
Operating/surgical cystoscopic rooms (FGI 2.2–3.4 & Table T2.2-2; also see Class 3 Imaging) (m), (o)	Positive	4	20	NR	NoA, B	Yes	MERV-16	20–60	68-75/20-24
Patient care area corridor	NR	NR	2	NR	NRA, B, C, D	Yes	MERV-14	NR	NR
Patient room (FGI 2.1-2.3.2)	NR	2	4 (y)	NR	NRA, B, C, D	Yes	MERV-14	Max 60	70-75/21-24
Patient toilet room (FGI 2.1-2.3.5 & 2.1-2.3.6)	Negative	NR	10	Yes	No	Yes (ff)	MERV-8	NR	NR
PE anteroom (FGI 2.2–2.2.4.4) (t)	(e)	NR	10	NR	No <u>A</u>	No	HEPA	NR	NR
Phase I PACU and Phase II recovery (FGI 2.1–3.4.4 & 2.1–3.4.5)	NR	2	6	NR	NoA, B	Yes	MERV-14	20–60	70–75/21–24
Procedure room (Table T2.2-1) (o), (d)	Positive	3	15	NR	NoA, B	Yes	MERV-14	20-60	70-75/21-24
Protective environment room (FGI 2.2-2.2.4.4) (t)	Positive	2	12	NR	No <u>A</u>	No	HEPA	Max 60	70-75/21-24
Radiology waiting rooms (FGI 2.2–3.4.10.1)	Negative	2	12	Yes (q), (w)	NR <u>A, C, D</u>	Yes (ff)	MERV-8	Max 60	70-75/21-24
Seclusion room (FGI 2.1–2.4.3)	NR	2	4 (y)	NR	NR <u>A, B, C, D</u>	Yes	MERV-14	Max 60	70-75/21-24
Sterile processing room (FGI 2.2–3.3.6.15)	NR	2	6	NR	No	Yes	MERV-8 (gg)	NR	NR
Treatment room (FGI 2.2–3.1.2.6) (p)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV-8	20-60	70-75/21-24
Wound intensive care (burn unit)	Positive	2	6	NR	NoA, B	Yes	HEPA	40–60	70-75/21-24
BEHAVIORAL AND MENTAL HEALTH FACILITIES (k)									
Patient bedroom, resident room (FGI 2.2-2.12.2 & 2.5-2.2.2)	NR	2	2	NR	NR <u>A, B, C, D</u>	Yes	MERV-8	NR	NR
Seclusion room (FGI 2.1–2.4.3 & 2.2–2.12.4.3)	NR	2	4	NR	NRA, B, C, D	Yes	MERV-8	NR	NR

DIAGNOSTIC AND TREATMENT

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Bronchoscopy, sputum collection, and pentamidine administration (FGI 2.2–3.9.2) (n), (x)	Negative	2	12	Yes	No <u>A</u>	Yes	MERV-14	NR	68-73/20-23
Class 1 imaging room (FGI 2.2–3.4.1.2 & Table 2.2-2)	NR (jj)	2	6	NR	NRA, B, C, D	Yes	MERV-8	Max 60	72-78/22-26
Class 2 imaging room (FGI 2.2-3.4.1.2 & Table 2.2-2) (d), (p)	Positive	3	15	NR	NoA, B	Yes	MERV-14	Max 60	70-75/21-24
Class 3 imaging room (FGI 2.2-3.4.1.2 & Table 2.2-2) (m), (o)) Positive	4	20	NR	NoA, B	Yes	MERV-16 (hh)	20–60	68-75/21-24
Dialysis treatment area (FGI 2.2–3.10.2)	NR	2	6	NR	NRA, B, C, D	Yes	MERV-8	NR	72-78/22-26
Dialyzer reprocessing room (FGI 2.2-3.10.8.16)	Negative	NR	10 (bb)	Yes	No	Yes (ff)	MERV-8	NR	NR

Table 7-1 Design Parameters—Inpatient Spaces (Continued)

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)		Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by type</u> (a)	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	Design Relative Humidity (k), %	Design Temperature (I), °F/°C
ECT procedure room (FGI 2.2–2.12.4.1 & 2.5–3.4)	NR	2	4	NR	NR <u>A, B, C, D</u>	Yes	MERV-8	Max 60	72–78/22–26
Gastrointestinal endoscopy procedure room (FGI 2.2–3.11.2 & Table 2.2-1) (x)	NR	2	6	NR	NoA, B	Yes	MERV-8	20–60	68-73/20-23
General examination room (FGI 2.1-3.2)	NR	2	4	NR	NRA, B, C, D	Yes	MERV-8	Max 60	70-75/21-24
Hydrotherapy (FGI 2.1-8.4.3.9)	Negative	2	6	NR	NRA, B, C, D	Yes	MERV-8	NR	72-80/22-27
Instrument processing room (FGI 2.2-3.11.4)	Negative	2	10	Yes	No	No	MERV-8 (gg)	NR	NR
Medication room (FGI 2.1-2.8.8.2[1])	NR	2	4	NR	NRA, B, C, D	Yes	MERV-8	Max 60	70-75/21-24
Nuclear medicine hot lab (FGI 2.2-3.4.8.22)	Negative	NR	6	Yes	No	Yes (ff)	MERV-8	NR	70-75/21-24
Physical therapy (FGI 2.2–2.13.8.16 & 2.6–3.1)	Negative	2	6	NR	<u>NRA, B, C, D</u>	Yes	MERV-8	Max 65	72-80/22-27
Special examination room (aa)	NR	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV-14 (ii)	Max 60	70–75/21–24
Treatment room (FGI 2.2-3.1.2.4)	NR	2	6	NR	<u>NRA, B, C, D</u>	Yes	MERV-8	Max 60	70-75/21-24
PATIENT SUPPORT FACILITIES									
Bedpan room (FGI 2.1–2.8.12.2 & 2.1–5.1.3.3)	Negative	NR	10	Yes	No	No	MERV-8	NR	NR
Environmental services room (FGI 2.1-2.8.14)	Negative	NR	10	Yes	No	No	MERV-8	NR	NR
Food and supply storage (FGI 2.1-4.3.8.13)	NR	NR	2	NR	<u>NoA, B, C, D</u>	No	MERV-8	NR	72-78/22-26

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Food preparation areas (FGI 2.1-4.3.2) (i)	NR	2	10	NR	No-A, B, C, D	Yes	MERV-8	NR	72-78/22-26
Laboratory work area, bacteriology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NRC, D	Yes	MERV-8	NR	70–75/21–24
Laboratory work area, biochemistry (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NR C, D	Yes	MERV-8	NR	70-75/21-24
Laboratory work area, cytology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NR C, D	Yes	MERV-8	NR	70-75/21-24
Laboratory work area, general (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	NR	NRA, B, C, D	Yes	MERV-8	NR	70-75/21-24
Laboratory work area, glasswashing (FGI 2.1-4.1.2) (f)	Negative	2	10	Yes	NRC, D	Yes	MERV-8	NR	NR
Laboratory work area, histology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NRC, D	Yes	MERV-8	NR	70-75/21-24
Laboratory work area, media transfer (FGI 2.1-4.1.2) (f), (v)	Positive	2	4	NR	NRA, B, C, D	Yes	MERV-8	NR	70–75/21–24
Laboratory work area, microbiology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NRC, D	Yes	MERV-8	NR	70-75/21-24
Laboratory work area, nuclear medicine (FGI 2.1-4.1.2) (f), (v) Negative	2	6	Yes	NRC, D	Yes	MERV-8	NR	70-75/21-24

Table 7-1 Design Parameters—Inpatient Spaces (Continued)

Function of Space (ee)	Pressure Relationship to Adjacent Areas (n)		Minimum Total ach	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units by type	Unoccupied Turndown	Minimum Filter Efficiencies (cc)	• • • • • • • • • • • • • • • • • • • •	Design Temperature (l), °F/°C
				•	(a)				
Laboratory work area, pathology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NRC, D	No	MERV-8	NR	70–75/21–24
Laboratory work area, serology (FGI 2.1-4.1.2) (f), (v)	Negative	2	6	Yes	NRC, D	Yes	MERV-8	NR	70–75/21–24
Laboratory work area, sterilizing (FGI 2.1-4.1.2) (f)	Negative	2	10	Yes	NRC, D	Yes	MERV-8	NR	70–75/21–24
Pharmacy Services: Pharmacy Areas (FGI 2.1-4.2.2) (b)	Positive	2	4	NR	NRA, B, C, D	Yes	MERV-8	Max 60	70-75/21-24
Toilet room (FGI 2.1–2.9.2)	Negative	NR	10	Yes	No	Yes	MERV-8	NR	72-78/22-26
Warewashing (FGI 2.1-4.3.4) (r)	Negative	NR	NR	Yes	No	Yes	MERV-8	NR	NR
GENERAL SUPPORT FACILITIES: STERILE PROCESSING									
Clean assembly/workroom (FGI 2.1–5.1.2.2[3]) (z)	Positive	2	4	NR	<u>NoA, B, C, D</u>	No	MERV-8 (gg)	Max 60	68-73/20-23
Soiled workroom/decontamination room (FGI 2.1-5.1.2.2[2]) (z)	Negative	2	6	Yes	No	No	MERV-8	NR	60-73/16-23
Sterile storage room (clean/sterile medical/ surgical supplies) (FGI 2.1–5.1.2.2[4]) (z)	Positive	2	4	NR	NR <u>A, B, C, D</u>	No	MERV-8 (gg)	Max 60	Max 75/24

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OTHER GENERAL SUPPORT FACILITIES									
Autopsy room (FGI 2.1–5.7.2.2)	Negative	2	12	Yes	No	No	MERV-8	NR	68-75/20-24
Clean linen storage room (FGI 2.1–2.8.13.1 & 2.1–5.2.2.1[3])	Positive	NR	2	NR	NRA, B, C, D	Yes	MERV-8	NR	72-78/22-26
Hazardous material storage (FGI 2.1-5.4)	Negative	2	10	Yes	No	No	MERV-8	NR	NR
Laundry, processing room (FGI 2.1-5.2.2.1)	Negative	2	10	Yes	No	No	MERV-8	NR	NR
Linen and refuse chute room (FGI 2.1-5.2.8.1[2] & 2.1-5.4.1.4)	Negative	NR	10	Yes	No	No	MERV-8	NR	NR
Nonrefrigerated body holding room (FGI 2.1-5.7.3) (h)	Negative	NR	10	Yes	No	No	MERV-8	NR	70-75/21-24
Regulated waste holding spaces (FGI 2.1-5.4.1.3)	Negative	NR	10	Yes	No	No	MERV-8	NR	NR
Toilet (FGI 2.1–2.9.2)	Negative	NR	10	Yes	No	Yes	MERV-8	NR	NR
SUPPORT AREAS FOR NURSING UNITS AND OTHER PATIE	ENT CARE ARE	AS							
Clean supply room (FGI 2.1–2.8.11.3)	Positive	NR	NR	NR	<u>NRA, B, C, D</u>	Yes	MERV-8	NR	NR
Clean workroom (FGI 2.1–2.8.11.2)	Positive	2	NR	NR	NRA, B, C, D	Yes	MERV-8	NR	NR
Soiled workroom or soiled holding (FGI 2.1–2.8.12)	Negative	2	10	Yes	No	No	MERV-8	NR	NR

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Normative Notes for Table 7-1:

- a. Room unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. Except where indicated by a "No" in this column, recirculating room Room HVAC units (with heating or cooling coils) are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 7.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked "No." Recirculating devices with high efficiency particulate air (HEPA) filters shall be permitted in existing facilities as interim, supplemental environmental controls to meet requirements for the control of airborne infectious agents. The design of either portable or fixed these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning.
- f. Higher ventilation rates above the total ach listed shall be used when dictated by the laboratory program requirements and the hazard level of the potential contaminants in each laboratory work area. Where higher ach are required, the minimum total air changes per hour shall be provided by an exhausting the air, not a room unit. Lower total ach ventilation rates shall be permitted when a hazard assessment, performed as part of an effective laboratory ventilation management plan per AIHA/ASSE Z9.5³, determines that either (1) acceptable exposure concentrations in the laboratory work area can be achieved with a lower minimum total ach ventilation rate than is listed in Table 7-1 or (2) a demand control approach with active sensing of contaminants or appropriate surrogates is used as described in ASHRAE Handbook—HVAC Applications¹0, Chapter 16, "Laboratories."
- q. In a recirculating ventilation system, including room units, HEPA filters shall be permitted instead of exhausting the air from these spaces to the outdoors, provided that the return air passes through the HEPA filters before it is introduced into any other spaces. The entire minimum total air changes per hour of recirculating airflow shall pass through HEPA filters.
 When these areas are open to larger, nonwaiting spaces, the exhaust air volume shall be calculated based on the seating area of the waiting area. (Informative Note: The intent here is to not require the volume calculation to include a very large space [e.g., an atrium] just because a waiting area opens onto it.)
- t. The protective environment airflow design specifications protect the patient from common environmental airborne infectious microbes (i.e., *Aspergillus* spores). Recirculation HEPA filters shall be permitted to increase the equivalent room air exchanges; however, the outdoor air changes are still required. Constant-volume airflow is required for consistent ventilation for the protected environment. The pressure relationship to adjacent areas shall remain unchanged if the protective environment (PE) room is used as a normal patient room. Rooms with reversible airflow provisions for the purpose of switching between PE and AII functions shall not be permitted.
- u. The AII room described in this standard shall be used for isolating the airborne spread of infectious diseases, such as measles, varicella, or tuberculosis. Supplemental recirculating devices using HEPA filters shall be permitted to recirculate air within the AII room to increase the equivalent room air exchanges; however, the minimum outdoor air changes of Table 7-1 are still required. When the AII room is not used for airborne infection isolation, the pressure relationship to adjacent areas, when measured with the door closed, shall remain unchanged, and the minimum total air change rate shall be 4 ach. Turndown of minimum air changes for the AII anteroom shall be based around the use of the associated AII room(s).

Revise Section 8.1.a.5 as shown. The remainder of section 8.1 is unchanged.

8. SPACE VENTILATION—OUTPATIENT SPACES...

8.1 Specialized Outpatient Facility Requirements. ...

- a. Spaces shall be ventilated according to Table 8-1.
 - 5. For spaces where Table 8-1 permits air to be recirculated by room units, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor

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air changes per hour required component may be provided by recirculating *room* HVAC *units*. Such recirculating *room* HVAC *units* shall

- i. not receive nonfiltered, nonconditioned outdoor air;
- ii. serve only a single space; and
- iii. provide a minimum MERV 8 filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.

...

Revise Table 8-1 and notes as shown below.

Table 8-1 Design Parameters—Specialized Outpatient Spaces

Function of Space (f)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	AII Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by</u> <u>type</u> (a)		Design Relative Humidity (k), %	Design Temperature (I), °F/°C
SURGERY AND EMERGENCY DEPARTMENT (ED)								
Delivery (Caesarean) (FGI 2.1-3.2.3) (m), (o), (v), (gg)	Positive	4	20	NR	NoA, B	MERV-16 (dd)	20–60	68-75/20-24
ED human decontamination (FGI 2.8-3.4.8)	Negative	2	12	Yes	No	MERV-14 (cc)	NR	NR
ED exam/treatment room (FGI 2.8-3.4.2) (p)	NR	2	6	NR	NRA, B, C, D	MERV-14 (cc)	Max 60	70-75/21-24
ED public waiting area (FGI 2.8-6.2.3)	Negative	2	12	Yes (q)	NRA, C, D	MERV-8	Max 65	70-75/21-24
Operating room (FGI 2.1-3.2.3) (m), (o), (v), (gg)	Positive	4	20	NR	NoA, B	MERV-16 (dd)	20–60	68-75/20-24
Procedure room (FGI 2.1-3.2.2) (d), (o), (p)	Positive	3	15	NR	NoA, B	MERV-14	20–60	70-75/21-24
Phase I recovery (PACU) (FGI 2.1-3.7.4)	NR	2	6	NR	NoA, B	MERV-8	Max 60	70-75/21-24
Phase II recovery (FGI 2.1-3.7.5) (u)	NR	2	2	NR	NRA, B, C, D	MERV-8	Max 60	70-75/21-24
Pre-procedure patient care (FGI 2.1-3.7.3) (t)	NR	2	2	NR	NRA, B, C, D	MERV-8	Max 60	70-75/21-24
Trauma room (crisis or shock) (FGI 2.8-3.4.4) (bb)	Positive	3	15	NR	NoA, B	MERV-14	20–60	70-75/21-24
Triage (FGI 2.8-6.2.2.2 & 6.2.2.3)	Negative	2	12	Yes (q)	NRA, C, D	MERV-8	Max 60	70-75/21-24
DIAGNOSTIC AND TREATMENT								
Class 1 imaging room (FGI 2.1-3.5.2.4[1][b][i]) (ff)	NR	2	6	NR	NR <u>A, B, C, D</u>	MERV-8	Max 60	72-78/22-26
Class 2 imaging room (FGI 2.1–3.5.2.4[1][b][ii]) (d), (p), (ff)	Positive	3	15	NR	NoA, B	MERV-14	20–60	70-75/21-24
Class 3 imaging room (FGI 2.1–3.5.2.4[1][b][ii]) (m), (o), (ff)	Positive	4	20	NR	NoA, B	MERV-16 (dd)	20–60	68-75/20-24
Diagnostic imaging waiting (FGI 2.1-3.5.10.4) (g)	Negative	2	12	Yes (q), (r)	NRA, B, C, D	MERV-8	Max 60	70-75/21-24
AII anteroom (FGI 2.1-3.3.2.3) (i)	(e)	NR	10	Yes	No <u>A</u>	MERV-8	NR	NR
AII room (FGI 2.1–3.3.2) (i)	Negative	2	12	Yes	No <u>A</u>	MERV-8	Max 60	70-75/21-24
PE anteroom (FGI 1.2-4.2.2.1[1]) (n) (w)	(e)	NR	10	NR	NoA	HEPA	NR	NR
Protective environment room (FGI 1.2-4.2.2.1[1]) (n) (w)	Positive	2	12	NR	No <u>A</u>	HEPA	Max 60	70-75/21-24
Cancer treatment area (FGI 2.6-3.1)	NR	2	6	NR	NR <u>A, B, C, D</u>	MERV-8	Max 60	70-75/21-24
Dialysis treatment area (FGI 2.10-3.2)	NR	2	6	NR	NR <u>A, B, C, D</u>	MERV-8	NR	72-78/22-26
Dialyzer reprocessing room (FGI 2.10-3.8.12)	Negative	NR	10	Yes	No	MERV-8	NR	NR
Bronchoscopy (FGI 2.1-3.2.2.1) (n) (x)	Negative	2	12	Yes	No <u>A</u>	MERV-14	NR	68-73/20-23

Instrument processing room (FGI 2.1–4.3.2.3)	Negative	2	10	Yes	No	MERV-8 (s)	NR	NR
Endoscopy procedure room (FGI 2.9-3.2) (h)	NR	2	6	NR	<u>NoA, B, C, D</u>	MERV-8	Max 60	68-73/20-23

Informative Note: NR = no requirement

Table 8-1 Design Parameters—Specialized Outpatient Spaces

Function of Space (f)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	AII Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units <u>by</u> <u>type</u> (a)	Minimum Filter Efficiencies (c)	Design Relative Humidity (k), %	Design Temperature (I), °F/°C
DIAGNOSTIC AND TREATMENT (Continued)								
Examination/observation (FGI 2.1-3.2.1)	NR	2	4	NR	NRA, B, C, D	MERV-8	Max 60	70-75/21-24
Specialty IC exam room (y)	Negative	2	6	Yes	NRA, B, C, D	MERV-8	Max 60	70-75/21-24
Laboratory work room (FGI 2.1-4.1.2.1) (z)	Negative	2	6	Yes	NRA, B, C, D	MERV-8	NR	70-75/21-24
Pharmacy/med prep (FGI 2.1-3.8.8.2 & 2.1-4.2.2) (b)	Positive	2	4	NR	<u>NRA, B, C, D</u>	MERV-8	NR	NR
Laser eye room (FGI 2.1-3.2.2)	NR	2	6	NR	NoA, B	MERV-8	Max 60	68-73/20-23
Nuclear medicine (see Section 8.7) (FGI 2.1-3.5.7)	Negative	2	6	Yes	No	MERV-8	NR	70-75/21-24
Toilet or Toilet/Shower room (FGI 2.1-3.10.2)	Negative	NR	10	Yes	No	MERV-8	NR	NR
STERILE PROCESSING (aa)								
One-room sterile processing (FGI 2.1-4.3.2.3)	NR	2	6	NR	NoA, B	MERV-14 (ee)	NR	NR
Sterilizer equipment room (FGI 2.1-4.3.2.2)	Negative	NR	10	Yes	NRA, B, C, D	MERV-8	NR	NR
Clean workroom (FGI 2.1-4.3.2.2.3)	Positive	2	4	NR	NoA, B	MERV-14 (ee)	Max 60	60-73/16-23
Clean supply storage (FGI 2.1-4.3.2.2.4)	Positive	2	4	NR	NRA, B, C, D	MERV-14 (ee)	Max 60	72-78/22-26
Supply receiving (FGI 2.1-4.3.2.4)	Negative	NR	10	Yes	No	MERV-8	NR	NR
Decontamination room (FGI 2.1-4.3.2.2)	Negative	2	6	Yes	No	MERV-8	NR	60-73/16-23
SERVICE/SUPPORT SPACE								
Environmental services room (FGI 2.1-5.3.1)	Negative	NR	10	Yes	No	MERV-8	NR	NR
Laundry/linen processing (FGI 2.1-4.4.2.1)	Negative	2	10	Yes	No	MERV-8	NR	NR
Clean workroom or clean supply (FGI 2.1-3.8.11)	Positive	2	4	NR	NRA, B, C, D	MERV-8	NR	NR
Regulated waste holding (FGI 2.1-5.2.1.3)	Negative	2	10	Yes	No	MERV-8	NR	NR
Soiled workroom or soiled holding (FGI 2.1-3.8.12)	Negative	2	6	Yes	No	MERV-8	NR	72-78/22-26

Informative Note: NR = no requirement

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Normative Notes for Table 8-1:

- a. Room unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. Except where indicated by a "No" in this column, recirculating room Room HVAC units (with heating or cooling coils) are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 8.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked "No." Recirculating devices with high efficiency particulate air (HEPA) filters shall be permitted in existing facilities as interim, supplemental environmental controls to meet requirements for the control of airborne infectious agents. The design of either portable or fixed these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning.
- i. The AII room described in this standard shall be used for isolating the airborne spread of infectious diseases, such as measles, varicella, or tuberculosis. Supplemental recirculating devices using HEPA filters shall be permitted in the AII room to increase the equivalent room air exchanges; however, the minimum outdoor air changes of Table 8-1 are still required. When the AII room is not used for airborne infection isolation, the pressure relationship to adjacent areas, when measured with the door closed, shall remain unchanged, and the minimum total air change rate shall be 6 ach.
- q. In a recirculating ventilation system, including *room units*, HEPA filters shall be permitted instead of exhausting the air from these spaces to the outdoors, provided that the return air passes through the HEPA filters before it is introduced into any other spaces. The entire minimum total air changes per hour of recirculating airflow shall pass through HEPA filters.

 When these areas are open to larger, nonwaiting spaces, the exhaust air volume shall be calculated based on the seating area of the waiting area. (*Informative Note:* The intent here is to not require the volume calculation to include a very large space [e.g., an atrium] just because a waiting area opens onto it.)
- gg. As an exception to the standard, alternative ventilation is allowed that provides a fan mounted in a mechanical space outside the room that supplies air through a HEPA filter to the ceiling diffuser.

Revise Section 8.2.a.5 as shown. The remainder of section 8.2 is unchanged

8.2 General Outpatient Facility Requirements...

- a. Spaces shall be ventilated according to Table 8-2.
 - 5. For spaces where Table 8-2 permits air to be recirculated by *room units*, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating room HVAC units. Such recirculating room HVAC units shall
 - i. not receive nonfiltered, nonconditioned outdoor air;
 - ii. provide the manufacturer's recommended filter (or MERV-8 as a minimum) for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.

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Revise Table 8-2 and notes as shown below.

Table 8-2 Design Parameters—General Outpatient Spaces (q)

-		ach Desig	n Option						R _p -R _a Air-Cl	ass Design Option	
Function of Space (f)	Pressure Relationship to Adjacent Areas (d)	Min. Outdoor ach (q)	Min. Total ach (q)	All Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units by type (a)	Min. Filter Efficiencies (c)	Design RH% (i)	Design Temperature °F/°C (k)	Air Class (q)	R _p cfm/(L·s)/ person and Min. Space Population (q)	R_a cfm/ft/(L·s/m) (q)
GENERAL DIAGNOSTIC AND TREATMENT											
Birthing room (FGI 2.4-2.2)	NR	2	3	NR (h)	NR C, D	MERV-14	Max 60	70-75/21-24	2	10 (5) / 4	0.18 / (0.9)
Urgent care exam (FGI 2.5-3.2.1) (e)	NR	2	3	NR	NRA, B, C, D	MERV-8	NR	70-75/21-24	2	7.5 (3.8) / 3	0.12 / (0.6)
Urgent care treatment (FGI 2.5-3.2.2) (e)	NR	2	3	NR	NRA, B, C, D	MERV-8	NR	70-75/21-24	2	7.5 (3.8) / 3	0.18 / (0.9)
Urgent care triage (FGI 2.5-3.2.3)	Negative	2	3	Yes <u>(r)</u>	NRA, C, D	MERV-8	Max 60	70-75/21-24	3	10 (5) / 3	0.18 / (0.9)
Urgent care observation (FGI 2.5-3.3)	NR	2	2	NR	NRA, B, C, D	MERV-8	NR	70-75/21-24	2	5 (2.5) / 2	0.12 / (0.6)
General examination room (FGI 2.1-3.2.1)	NR	2	2	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	7.5 (3.8) / 3	0.12 / (0.6)
Specialty IC exam room (b)	Negative	2	3	Yes <u>(r)</u>	NRA, C, D	MERV-8	Max 60	70-75/21-24	3	10 (5) / 3	0.18 / (0.9)
Laboratory work room (FGI 2.1-4.1.2.1) (l)	NR	2	3	NR (h)	NRC, D	MERV-8	NR	70-75/21-24	2	7.5 (3.8) / 2	0.12 / (0.6)
Medication room (FGI 2.1-3.8.8.2)	NR	2	2	NR	NR <u>A, B, C, D</u>	MERV-8	Max 60	70-75/21-24	1	5 (2.5) / 2	0.18 / (0.9)
Class 1 Imaging rooms (FGI 2.1-3.5) (g)	NR	2	3	NR	NR <u>A, B, C, D</u>	MERV-8	Max 60	72-78/22-26	1	7.5 (3.8) / 2	0.12 / (0.6)
Psychiatric examination room (FGI 2.11-3.2.2)	NR	2	3	NR	NRA, B, C, D	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Psychiatric consultation room (FGI 2.11-3.2.4)	NR	2	3	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Psychiatric group room (FGI 2.11-3.2.5)	NR	2	3	NR	<u>NRA, B, C, D</u>	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Psychiatric seclusion room (FGI 2.11-3.2.7)	NR	2	2	NR	NRA, B, C, D	MERV-8	NR	70-75/21-24	2	10 (5) / 3	0.12 / (0.6)
ECT procedure room (FGI 2.11-3.2.9.2)	NR	2	2	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	7.5 (3.8) / 3	0.12 / (0.6)
Physical therapy individual room (FGI 2.12-3.2.2.1)	NR	2	3	NR (h)	NRC, D	MERV-8	NR	70-75/21-24	2	10 (5) / 3	0.12 / (0.6)
Physical therapy exercise area (FGI 2.12-3.2.3)	NR	2	3	NR (h)	NRC, D	MERV-8	NR	70-75/21-24	2	20 (10) / 2	0.18 / (0.9)
Hydrotherapy (FGI 2.12-3.2.4)	Negative	2	3	Yes	NR No	MERV-8	NR	72-80/22-27	3	20 (10) / 2	0.12 / (0.6)
Physical therapeutic pool (FGI 2.12-3.2.4)	Negative	2	10	Yes	NR No	MERV-8	NR	72-80/22-27	3	_	0.48 / (2.4)
Speech therapy room (FGI 2.12-3.3.2)	NR	2	2	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Occupational therapy (FGI 2.12-3.3)	NR	2	3	NR	<u>NRA, B, C, D</u>	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Prosthetics and orthotics room (FGI 2.12-3.3.1)	NR	2	3	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	2	10 (5) / 3	0.18 / (0.9)
Dental treatment (FGI 2.14-3.1.1)	NR	2	3	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	10 (5) / 3	0.18 / (0.9)
Other dental treatment areas (FGI 2.14-3.2)	NR	2	3	NR	NR <u>A, B, C, D</u>	MERV-8	NR	70-75/21-24	1	5 (2.5) / 2	0.06 / (0.3)
Toilet room (FGI 2.1-3.10.2)	Negative	NR	4	Yes	No	MERV-8	NR	NR	3	_	_
SERVICE /SUPPORT SPACE											
Environmental services room (FGI 2.1-5.3.1)	Negative	NR	6	Yes	No	MERV-8	NR	NR	3	_	_

Clean supply (FGI 2.1-3.8.11) (m) (n)	NR	2	2	NR	NRA, B, C, D	MERV-8	NR	NR	1	5 (2.5) / 2	0.12 / (0.6)
Soiled holding (FGI 2.1-3.8.12) (m) (o) (p)	Negative	NR	6	Yes	No	MERV-8	NR	NR	3	5 (2.5) / 2	0.12 / (0.6)

Informative Note: NR = no requirement

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Normative Notes for Table 8-2:

a. Room unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single device with a combination of components may be utilized. Except where indicated by a "No" in this column, recirculating room Room HVAC units (with heating or cooling coils) are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 8.2(a)(5). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked "No."

...

r. In a recirculating ventilation system, including *room units*, HEPA filters shall be permitted instead of exhausting the air from these spaces to the outdoors, provided that the return air passes through the HEPA filters before it is introduced into any other spaces. The entire minimum total air changes per hour of recirculating airflow shall pass through HEPA filters.

Revise Section 9.1.a.5 as shown below. The remainder of section 9.1 is unchanged.

9. SPACE VENTILATION—RESIDENT HEALTH, CARE, AND SUPPORT SPACES...

9.1 General Requirements. The following general requirements shall apply for space ventilation:

a. ...

. . .

- 5. For spaces where Table 9-1 permits air to be recirculated by *room units*, the portion of the minimum total air changes per hour required for a space that is greater than the minimum outdoor air changes per hour required component may be provided by recirculating *room HVAC units*. Such recirculating *room HVAC units* shall
 - i. not receive nonfiltered, nonconditioned outdoor air;
 - ii. serve only a single space; and
 - iii. provide, as a minimum, the manufacturer's recommended filter for airflow passing over any surface that is designed to condense water. This filter shall be located upstream of any such cold surface, so that all of the air passing over the cold surface is filtered.

6. ...

Revise Table 9-1 and notes as shown below.

Table 9-1 Design Parameters for Residential Health, Care, and Support-Specific Spaces

Function of Space (f)	Pressure Relationship to Adjacent Areas (n)	Minimum Outdoor ach	Minimum Total ach	AII Room Air Exhausted Directly to Outdoors (j)	Air Recirculated by Means of Room Units by type (a)	Unoccupied Turndown	Minimum Filter Efficiencies (c)	Design Relative Humidity (k), %	Design Temperature (l), °F/°C
RESIDENTIAL HEALTH									
NURSING HOMES									
AII room (FGI 3.1–2.2.4.1) (b)	Negative	2	12	Yes	NoA	Yes	MERV- 14	Max 60	70–78/21–26
AII anteroom (FGI 3.1–2.2.4.1) (b)	Negative	NR	10	Yes	No <u>A</u>	Yes	MERV- 14	Max 60	70–78/21–26
Occupational therapy (FGI 3.1-3.3.3)	NR	2	6	NR	<u>NRA, B, C, D</u>	Yes	MERV- 14	NR	70–78/21–26
Physical therapy (FGI 3.1-3.3.2)	Negative	2	6	NR	NR <u>A, B, C, D</u>	Yes	MERV- 14	NR	70–78/21–26
Resident living/activity/dining (FGI 3.1-2.3.3)	NR	4	4	NR	NR <u>A, B, C, D</u>	Yes	MERV- 14	Max 60	70–78/21–26
Resident room (FGI 3.1-2.2.2)	NR	2	2	NR	NRA, B, C, D	Yes	MERV- 14	Max 60	70–78/21–26
Resident corridor (FGI 2.4–2.2.2)	NR	NR	4	NR	NR <u>A, B, C, D</u>	Yes	MERV- 14	NR	70–78/21–26
Toilet/bathing room (FGI 3.1–2.2.2.6)	Negative	NR	10	Yes	No	No	MERV- 14	NR	70–78/21–26
HOSPICE FACILITIES									
AII room (FGI 3.2–2.2.3.1) (c)	Negative	2	12	Yes	No <u>A</u>	Yes	MERV- 14	Max 60	70–75/21–24
AII anteroom (FGI 3.2–2.2.3.1) (c)	(e)	NR	10	Yes	No <u>A</u>	Yes		Max 60	NR
Resident room (FGI 3.2-2.2.2)	NR	2	2	NR	NR <u>A, B, C, D</u>	Yes	MERV- 8	Max 60	70–75/21–24
Resident corridor (FGI 2.4–2.2.2)	NR	NR	4	NR	NRA, B, C, D	Yes	MERV- 8	NR	NR
Toilet/bathing room (FGI 3.2–2.2.2.6)	Negative	NR	10	Yes	No	Yes	MERV- 8	NR	70–75/21–24
RESIDENTIAL CARE AND SUPPORT									
ASSISTED LIVING FACILITIES									
Resident living/activity/dining (FGI 4.1-2.3.3)	NR	NR	NR	NR	NRA, B, C, D	Yes	MERV- 8	NR	NR
Resident room (FGI 4.1-2.2.2)	NR	NR	NR	NR	NR <u>A, B, C, D</u>	Yes	MERV- 8	NR	70-78/21-26
Resident corridor (FGI 2.4–2.2.2)	NR	NR	NR	NR	NR <u>A, B, C, D</u>	Yes	MERV- 8	NR	NR
Toilet/bathing room (FGI 4.1–2.2.2.7)	NR	NR	NR	NR	NRNo	Yes	MERV- 8	NR	NR
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	Clean linen storage (FGI 2.3-4.6)	Positive	NR	2	NR	NRA, B, C, D	No	MERV-	NR	72-78/22-26
	Dietary storage (FGI 2.3-4.5)	NR	NR	2	NR	NoA, B	No	•	NR	72-78/22-26
	Food preparation center (FGI 2.3-4.5.3.3) (e)	NR	2	10	NR	NoA, B	Yes	MERV-	NR	72-78/22-26
	Hair salon (FGI 2.3–2.3.5 & 4.1–2.3.5)	Negative	NR	10	Yes	NR <u>A, B, C, D</u>	Yes	O	NR	70-78/21-26
	Laundry, central and personal (FGI 2.3-4.2.7)	Negative	2	10	Yes	No	No	MERV- 8	NR	NR
	Linen and trash chute room (FGI 2.3–4.6 & 2.3–4.9)	Negative	NR	10	Yes	No	No	O	NR	NR
	Medication room (FGI 2.3–4.2.2.2)	NR	2	4	NR	NR <u>A, B, C, D</u>	Yes	MERV-	Max 60	70-75/21-24
	Soiled linen sorting and storage (FGI 2.3-4.6)	Negative	NR	10	Yes	No	No	O	NR	NR
	Warewashing (FGI 2.3–4.5.3.6)	Negative	NR	10	Yes	No	Yes	MERV-	NR	NR
S	SUPPORT SPACE							0		
~	Clean utility (FGI 2.3–4.2.5)	Positive	2	4	NR	NR <u>A, B, C, D</u>	No	MERV- 8 (k)	NR	NR
	Environmental services room (FGI 2.3–4.9) (j)	Negative	NR	10	Yes	NR <u>No</u>	No		NR	NR
	Hazardous waste storage (FGI 2.3-4.8)	Negative	2	10	Yes	No	No	MERV-	NR	NR
	Nonrefrigerated body holding room	Negative	NR	10	Yes	No	No	MERV-	NR	68-75/20-24
	Soiled utility or soiled holding (FGI 2.3–4.2.6)	Negative	2	10	Yes	No	No	MERV-	NR	NR
Info	emativa Nata: NP = No requirement							O		

Informative Note: NR = No requirement

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Normative Notes for Table 9-1:

- a. Room unit use shall be limited to the type indicated in this column. Where multiple unit types are indicated, a single devic with a combination of components may be utilized. Except where indicated by a "No" in this column, recirculating room Room HVAC units (with heating or cooling coils) are acceptable for providing that portion of the minimum total air changes per hour that is permitted by Section 9.1 (subparagraph [a][5]). Because of the cleaning difficulty and potential for buildup of contamination, recirculating room units shall not be used in areas marked "No." Recirculating devices with high efficiency particulate air (HEPA) filters shall be permitted in existing facilities as interim, supplemental environmental controls to meet requirements for the control of airborne infectious agents. The design of either portable or fixed these systems should prevent stagnation and short circuiting of airflow. The design of such systems shall also allow for easy access for scheduled preventative maintenance and cleaning.
- b. The AII room described in this standard shall be used for isolating the airborne spread of infectious diseases, such as measles, varicella, or tuberculosis. Supplemental recirculating devices using HEPA filters shall be permitted in the AII room to increase the equivalent room air exchanges; however, the minimum outdoor air changes of Table 9-1 are still required. When the AII room is not used for airborne infection isolation, the pressure relationship to adjacent areas, when measured with the door closed, shall remain unchanged, and the minimum total air change rate shall be 6 ach.

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