

Infrastructure Evaluation Tool

Introduction

This tool is intended to assist organizations in the selection and modification of space for the treatment of patients affected by either airborne or droplet organisms.

The characteristics and criteria outlined in this tool are intended to be minimums and an organization may choose to exceed these minimums.

The following reference documents were utilized in the compilation of this tool and organizations are advised to reference these (or more current) resources frequently during the process.

Facility Guidelines Institute: 2018 Guidelines for Design and Construction of Hospitals

ANSI/ASHRAE/ASHE Standard 170-2017; Ventilation of Health Care Facilities

NFPA 99-2012: Health Care Facilities Code



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Infection Prevention & Control Tools



INFRASTRUCTURE Requirements for an ICU room

INFRASTRUCTURE Requirements for an ICU room		Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
			Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. Infection ICRA : Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture									
A1	Clear floor area in room	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support
A2	Minimum clearances around bed	5 feet at bedsides, 4 feet at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings
A3	Cleanable wall, floor and ceiling surfaces	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A5 All	PPE space at room entrance	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	None permitted except privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation									* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination, etc.
V1	Outdoor Air Exchange / Hour	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges when necessary to meet standard. Ensure pressurization remains unaffected if changes to outdoor air exchange are made
V2	Total Air Exchange / Hour	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered.
V3	Outlet types	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1(b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm	Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.
V9	Power	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level

INFRASTRUCTURE Requirements for an ICU room		Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
			Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. Infection ICRA : Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Electrical Systems									
E1	Outlets	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Number not specified by code	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits, one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems									
P1 All	Sinks for hand hygiene	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room.
P2 All	Patient toilet room	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a handwashing sink in the patient room.
P3	Additional Hand Sanitizers	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room.
P4 All	Bath or shower	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRA shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required	na	na	1	na	na	CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD). Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSH Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized
Medical Gases									
M1	Oxygen outlets (Min)	3	na	na	1	3	2	FGI 2018 T 2.1-3	All Requirement
M2	Oxygen flow (SCFM)	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator

INFRASTRUCTURE Requirements for an ICU room		Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
			Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. Infection ICRA : Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Fire Safety Systems									
F1	Sprinklers	100% required by 2028* including retrofit	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detector	Required in certain areas*	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms									
I1	Nurse Call (wired)	Required	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	na	na	2	na	na		To be considered



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INFRASTRUCTURE
Requirements to convert
an Emergency Department
Exam / Treatment room

INFRASTRUCTURE Requirements to convert an Emergency Department Exam / Treatment room		Existing Emergency Department Exam / Treatment: Minimum Infrastructure	Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	200 sf	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support
A2	Minimum clearances around bed	5 feet at bedsides, 4 feet at foot, 1 foot at head	5 foot at bedsides, 4 foot at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Required	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted excepting privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure pressurization remains unaffected if changes to outdoor air exchanges are made
V2	Total Air Exchange / Hour	6	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1(b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm	No Requirement	Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	MERV 7 or higher	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	No Requirement	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	Emergency power required	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B)Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

INFRASTRUCTURE Requirements to convert an Emergency Department Exam / Treatment room		Existing Emergency Department Exam / Treatment: Minimum Infrastructure	Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	12	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Essential Electrical System Not Required	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside exam/treatment room	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room for both Droplet and Airborne precautions.
P2 All	Patient toilet room	Not required	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a Hand washing sink in the patient room for both Droplet and Airborne precautions.
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Not required	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRA shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required unless dictated by clinical program	Not required	na	na	1	na	na	ODC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings, Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention, June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD), Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA), Washington, DC: US Environmental Protection Agency, 1990. OSH Act of 1970, General Duty Clause, Section 5, Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized

INFRASTRUCTURE Requirements to convert an Emergency Department Exam / Treatment room		Existing Emergency Department Exam / Treatment: Minimum Infrastructure	Critical Care / Airborne Infection Isolation: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	6	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	Not required	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	Not required	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	Required by local AHJ's for new	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detection	Required in certain areas by local AHJs and code	Required in certain areas by local AHJs and code	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered



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INFRASTRUCTURE ***Requirements to convert*** ***Post Anesthesia Care*** ***Space (PACU)***

INFRASTRUCTURE Requirements to convert Post Anesthesia Care Space (PACU)		Existing PACU: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	200 sf	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support
A2	Minimum clearances around bed	5 feet at bedsides, 4 feet at foot, 1 foot at head	5 foot at bedsides, 4 foot at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Required	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted excepting privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure pressurization remains unaffected if changes to outdoor air exchange are made
V2	Total Air Exchange / Hour	6	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered for Covid control after Infection control risk assessment
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1(b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm	No Requirement	Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	MERV 7 or higher	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	No Requirement	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	Emergency power required	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

INFRASTRUCTURE Requirements to convert Post Anesthesia Care Space (PACU)		Existing PACU: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	8	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Essential Electrical System Not Required	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside exam/treatment room	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room
P2 All	Patient toilet room	Not required	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a Hand washing sink in the patient room
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Not required	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRA shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required unless dictated by clinical program	Not required	na	na	1	na	na	CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD). Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSH Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized

INFRASTRUCTURE Requirements to convert Post Anesthesia Care Space (PACU)		Existing PACU: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	6	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	3	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	1	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	6	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	Required by local AHJ's for new	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detection	Required in certain areas by local AHJs and code	Required in certain areas by local AHJs and code	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered



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***INFRASTRUCTURE
Requirements to
convert Operating Suite
Recovery Space***

INFRASTRUCTURE Requirements to convert Operating Suite Recovery Space		Existing O.R. Recovery: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	No Requirement	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support
A2	Minimum clearances around bed	3 foot between sides and foot of bed	5 feet at bedsides, 4 feet at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Not required (curtains permitted)	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted except privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure critical negative pressure remains unaffected
V2	Total Air Exchange / Hour	6	12	1	na	2	3	na	ASHRAE 170 Table 7.1	Airborne infection isolation (All) requirement. Optimization of total air exchanges can be considered for Covid control after Infection control risk assessment
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1 (b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm	No Requirement	Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	MERV 7 or higher	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	No Requirement	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	Emergency power required	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

INFRASTRUCTURE Requirements to convert Operating Suite Recovery Space		Existing O.R. Recovery: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, drople, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	8	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Essential Electrical System Not Required	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside exam/treatment room	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room
P2 All	Patient toilet room	Not required	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a handwashing sink in the patient room
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Not required	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRA shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required unless dictated by clinical program	Not required	na	na	1	na	na	CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD). Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSH Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized

INFRASTRUCTURE Requirements to convert Operating Suite Recovery Space		Existing O.R. Recovery: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	6	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	3	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	1	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	6	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	Required by local AHJ's for new	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detection	Required in certain areas by local AHJs and code	Required in certain areas by local AHJs and code	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered



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Infection Prevention & Control Tools

INFRASTRUCTURE Requirements to convert a MedSurg Rm

INFRASTRUCTURE Requirements to convert a MedSurg Rm		Existing Gen Med Surg Room: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	No Requirement	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support
A2	Minimum clearances around bed	3 foot clearance at side, 2 foot clearance at foot, no requirement at head	5 feet at bedsides, 4 feet at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Not required (curtains permitted)	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted except privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure critical negative pressure remains unaffected
V2	Total Air Exchange / Hour	4	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered for Covid control after Infection control risk assessment
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1 (b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm	No Requirement	Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	MERV 7 or higher	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	MERV 14 or higher	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	Emergency power required	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) Located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

INFRASTRUCTURE Requirements to convert a MedSurg Rm		Existing Gen Med Surg Room: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	12	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Type 2 Essential Electrical System (Life Safety & Equipment Branch)	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside patient room and adjacent to patient room entry	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room
P2 All	Patient toilet room	1 per room	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a Hand washing sink in the patient room
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Patient bathing may be centralized by unit	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRAs shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required	Not required	na	na	1	na	na	CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS OSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD). Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSH Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organizations water management program should be reviewed to ensure risk of waterborne pathogens is minimized

INFRASTRUCTURE Requirements to convert a MedSurg Rm		Existing Gen Med Surg Room: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	6*	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	1	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	0	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	6*	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	100% required by 2028* including retrofit	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detector	Required in certain areas*	No Changes	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered



Amb Ex ??

Amb Ex ????		???: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	80 sf	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support.
A2	Minimum clearances around bed	2 foot 8 inches around exam table or recliner	5 foot at bedsides, 4 foot at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Required	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same condition.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	Additional masks need to be available at room entry for Droplet precautions
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted except privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure critical negative pressure remains unaffected
V2	Total Air Exchange / Hour	4	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered for Covid control after Infection control risk assessment
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1(b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm		Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	No Requirement	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	MERV 7 or higher	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	No Requirement	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

Amb Ex ????		???: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Emergency power required	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	1 duplex	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Essential Electrical System Not Required	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside patient room and adjacent to patient room entry	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room .
P2 All	Patient toilet room	Not required	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a handwashing sink in the patient room
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Not required	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRMR shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required unless dictated by clinical program	Not required	na	na	1	na	na	CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD); Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSHA Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized

Amb Ex ????		???: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA: Written plans shall describe describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	Not required	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	Not required	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	Not required	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	Not required	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	Not required	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	Required by local AHJ's for new	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detection	Required in certain areas by local AHJs and code	Required in certain areas by local AHJs and code	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered



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Infection Prevention & Control Tools

INFRASTRUCTURE ***Requirements to convert*** ***an outpatient testing room***

INFRASTRUCTURE Requirements to convert an outpatient testing room		Existing Ambulatory testing: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA recommendations: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Architecture										
A1	Clear floor area in room	80 sf	200 sf	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clear floor area is the space available for functional clinical activities and patient support.
A2	Minimum clearances around bed	2 foot 8 inches around exam table or recliner	5 foot at bedsides, 4 foot at foot, 1 foot at head	na	na	1	2	3	FGI 2018 2.2-2.6.2.2	Clearances provide the available space for clinical equipment and moveable furnishings.
A3	Cleanable wall, floor and ceiling surfaces	Required	Required	1	1	2	2	na	FGI 2018 2.1-7.2.3	
A4 All	Bed Capacity	NA	Single	1	na	2	na	na	FGI 2018 2.1.2.4.2.2 (1)	Only use ceiling tiles that are easily cleaned in droplet precaution rooms after risk assessment.
A5 All	PPE space at room entrance	NA	At room entrance	2	na	1	na	na	FGI 2018 2.1.2.4.2.2 (2)	A patient on Droplet precautions could be in a single patient room, or could be cohorted with another patient with the same infection.
A6 All	Self closing room doors	NA	Required if no pressure alarm	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (i)	Additional masks need to be available at room entry for Droplet precautions
A7 All	Edge seals required on all doors	NA	Required on all doors	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (ii)	
A8 All	Curtains and Drapes	NA	None permitted except privacy curtains	na	na	1	2	na	FGI 2018 2.1-2.4.2.4 (2)	
A9 All	All floors ceilings walls and penetrations	NA	Sealed from air infiltration	1	na	2	na	na	FGI 2018 2.1.2.4.2.4 (a), ASHRAE 170 Part 3, 7.2.1(e)	The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
Ventilation										* If clinical needs indicate minimums should be exceeded, exercise care to prevent unintended consequences, i.e. circuit trips, duct collapse or rupture, cross contamination etc.
V1	Outdoor Air Exchange / Hour	2	2	1	na	2	na	na	ASHRAE 170 Table 7.1	Increase outdoor air exchanges whenever possible for Covid control. Ensure critical negative pressure remains unaffected
V2	Total Air Exchange / Hour	4	12	1	na	2	3	na	ASHRAE 170 Table 7.1	All requirement. Optimization of total air exchanges can be considered for Covid control after Infection control risk assessment
V3	Outlet types	In or near ceiling	In or near ceiling	1	na	2	na	na	ASHRAE 170 Table 6.7.2	
V4 All	Exhaust	Must exhaust outdoors	Must exhaust outdoors *	1	na	2	na	na	ASHRAE 170 Table 7.1 & Part 3, 7.2.1 (b)	25 feet away from intakes and 10 feet away from adjoining roof levels. *Exception to 7.2.1 (b) When retrofitting standard patient rooms and direct exterior exhaust is impractical, recirculating room exhaust through a HEPA filter is permitted. Exhaust air from All spaces may not be mixed with other exhausts.
V5 All	Visual and audible pressure alarm		Required	1	na	2	na	na	FGI 2018 2.1-2.5.2.5 ASHRAE 170 Part 3, 7.2.1 (a)	
V6	Pressure	No Requirement	Negative to hallway	1	na	2	na	na	ASHRAE 170 Part 3/7.2.1 (e) (f)	Local visual means to monitor pressure differential. This measurable difference in air pressure creates a directional airflow between adjacent spaces. This airflow shall always flow from cleanest to dirtiest. The room envelope shall be sealed to provide a minimum pressure differential of 0.01 inches water column
V7	Filter Bank 1	MERV 7 or higher	MERV 7 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	Located upstream of heating and cooling coils. MERV is a standard that rates the overall effectiveness of air filters. Higher value MERV rating equates to finer filtration, meaning fewer dust particles and other airborne contaminants can pass through the filter. ref. American Society of Heating Refrigeration and Air-Conditioning Engineers
V8	Filter bank 2	No Requirement	MERV 14 or higher	1	na	2	na	na	ASHRAE 170 Part 3/6.4	A.) located downstream of all wet air cooling coils and supply fans. B.) Improve central air filtration to the MERV-13 or the highest compatible with the filter rack, and seal edges of the filter to limit bypass.

INFRASTRUCTURE Requirements to convert an outpatient testing room		Existing Ambulatory testing: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA recommendations: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
V9	Power	Emergency power required	Emergency power required	1	na	2	3	na	ASHRAE 170 Part 3/6.1.1	Ventilation unimpeded by loss of power
V10	Outdoor Air intakes	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	Min 25 feet from cooling towers, exhausts and vent discharges, Min 6ft above grade and not in public access ways	1	na	na	na	na	ASHRAE 170 Part 3/6.3.1	Air intakes on roofs shall be 3 feet above roof level
Electrical Systems										
E1	Outlets	1 duplex	16	na	na	1	3	2	FGI 2018 T 2.1-1	Convenient to head of bed and 1 per wall; additional electrical receptacles should be identified for clinical functions and patient and visitor needs.
E2	Normal Power	Not specified by code	No changes	na	na	1	2	na	NFPA 99 Ch 6 and FGI 2018 T 2.1-1	Each patient bed location shall be supplied by two branch circuits: one from the essential electrical system and one or more from the normal system.
E3	Emergency Power	Essential Electrical System Not Required	Type 1 Essential Electrical System (Life Safety, Equipment & Critical Branch)	na	na	2	3	1	NFPA 99 Ch 6	Utility power plus on-site generation required. Critical branch required for critical care areas that may include anesthetizing locations
E4	Lighting fixtures & controls	Locally controlled within the room	No changes	na	na	1	2	na	FGI 2018 2.1-8.3.4	
Plumbing Systems										
P1 All	Sinks for hand hygiene	Located inside patient room and adjacent to patient room entry	Located inside patient room and adjacent to patient room entry	na	1	2	3	na	FGI 2018 2.1-8.3.5.1 & 2.1-8.4.3 & 2.1.2.4.2.2 (3)	Handwashing sinks that depend on electrical power are connected to essential electrical system. Preferred best practice: There should be a handwashing sink in the patient room
P2 All	Patient toilet room	Not required	1 per room - directly accessible	na	1	2	3	na	FGI 2018 2.1-2.2.6, 2.1.2.4.2.2 (4)	Directly accessible is defined as connected to the patient room without an intervening space. Preferred best practice: There should be a handwashing sink in the patient room
P3	Additional Hand Sanitizers	Not required	Not required	na	2	2		na	NFPA 101 21.3.2.6	To be considered, total quantities and locations to be in accordance with NFPA 101. Preferred best practice: There should be an ABHR in the patient room
P4 All	Bath or shower	Not required	Within toilet room	1	na	3	2	na	FGI 2018 2.1.2.4.2.2 (5)	ICRAs shall include an assessment of the risk from transmissible waterborne pathogens and establish strategies to mitigate the risk
P5	Dialysis capabilities	Not required unless dictated by clinical program	Not required	na	na	1	na	na	<p>CDC Toolkit: Developing a Water Management Program to Reduce Legionella Growth and Spread in Buildings. Atlanta: US Department of Health and Human Services, US Centers for Disease Control and Prevention. June 7, 2017. CMS QSO 17-30-Hospitals/CAHs/NHs, Requirement to Reduce Legionella Risk in Healthcare Facility Water Systems to Prevent Cases and Outbreaks of Legionnaires' Disease (LD). Baltimore: Centers for Medicare and Medicaid Services, 2018. EPA 42 USC Section 7401 et seq., Clean Air Act (CAA). Washington, DC: US Environmental Protection Agency, 1990. OSHA Act of 1970, General Duty Clause, Section 5. Washington, DC: US Occupational Safety and Health Administration, 1970.</p>	Not required but should be considered in a small percentage of rooms. The organization's water management program should be reviewed to ensure risk of waterborne pathogens is minimized

INFRASTRUCTURE Requirements to convert an outpatient testing room		Existing Ambulatory testing: Minimum Infrastructure	Critical Care / All: Infrastructure Minimums*	Prioritization Category: (1) Primary Purpose (2) Secondary Purpose (3) Supporting Function (na) Not Applicable					References	Notes
				Airborne Precautions	Droplet Precautions	Clinical Support	Patient Comfort	Life Safety		General Note: The stated values on this checklist are minimum recommendations at time of publication. State and local authorities having jurisdiction should be consulted for local requirements that may exceed these minimums. ICRA recommendations: Written plans shall describe the specific methods by which transmission of airborne, droplet, contact or waterborne biological contaminants shall be avoided or mitigated during the pandemic event.
Medical Gases										
M1	Oxygen outlets (Min)	Not required	3	na	na	1	3	2	FGI 2018 T 2.1-3	All requirement
M2	Oxygen flow (SCFM)	Not required	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
M3	Med Vacuum outlets (Min)	Not required	3	na	na	1	3	2	FGI 2018 T 2.1-3	
M4	Medical Air outlets (Min)	Not required	1	na	na	1	3	2	FGI 2018 T 2.1-3	
M5	Medical Air flow (SCFM)	Not required	6	na	na	1	3	2	NFPA 99-2012 5.1.12.3.10.5	Peak flow to support ventilator
Fire Safety Systems										
F1	Sprinklers	Required by local AHJ's for new	No Changes	na	na	na	na	1	NFPA 101-2012	*Applies to hospitals over 75 feet tall
F2	Fire alarm	Required	No Changes	na	na	na	na	1	NFPA 101-2012	
F3	Smoke detection	Required in certain areas by local AHJs and code	Required in certain areas by local AHJs and code	na	na	na	na	1	NFPA 101-2012	*Patient sleeping suites that do not provide for direct supervision as well as other suite size requirements
IT & Comms										
I1	Nurse Call (wired)	Required	No changes	na	na	1	1	na	FGI 2018 T 2.1-2 & UI 1069	
I2	Nurse call (wireless)	Permitted	No changes	na	na	2	2	na	FGI 2018 T 2.1-2 & UI 1069	
I3	WIFI	Not required	Not required	na	na	2	2	na		To be considered
I4	TV	Not required	Not required	na	na	na	2	na		To be considered
I5	Two way radios	Not required	Not required	na	na	2	na	na		To be considered, ensure frequency has no impact on medical equipment
I6	Work station on wheels	Not required	Not required	na	na	2	na	na		To be considered