



## **COVID-19 and HAI Updates and Q&A Webinars for Long-Term Care and Congregate Residential Settings**

October 27<sup>th</sup> , 2023

# Housekeeping

- All attendees in listen-only mode
- Submit questions via Q&A pod to **All Panelists**
- Slides and recording will be made available later
- For continuing education credit, complete evaluation survey upon end of webinar
  - Must be registered individually to receive credit

# Agenda

- Upcoming Webinars
- Construction in the LTC Facility
- Open Q & A

# Upcoming Infection Prevention and Control Q&A

1:00 pm - 2:00 pm

Date	Infection Control Topic	Registration Link
Friday, October 27 <sup>th</sup>	Construction in the LTCF	<a href="https://illinois.webex.com/weblink/register/r55d125651a378d3edd32aaa55e881d1e">https://illinois.webex.com/weblink/register/r55d125651a378d3edd32aaa55e881d1e</a>
Friday, November 17 <sup>th</sup>	Common Skin Infections and Infestations in LTC	<a href="https://illinois.webex.com/weblink/register/rf5035ca8ad676765d583d94723585739">https://illinois.webex.com/weblink/register/rf5035ca8ad676765d583d94723585739</a>
Friday, December 1 <sup>st</sup>	Top 10 IDPH Deficiencies and How to Prevent Them	<a href="https://illinois.webex.com/weblink/register/reb1e9a25e7c184016208f4a60327f18f">https://illinois.webex.com/weblink/register/reb1e9a25e7c184016208f4a60327f18f</a>

# COVID Vaccine Information Sheet (VIS) now available

<https://www.cdc.gov/vaccines/hcp/vis/vis-statements/covid-19.html>

## VACCINE INFORMATION

# COVID-19 Vaccine: *What You Need to Know*

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## 1. Why get vaccinated?

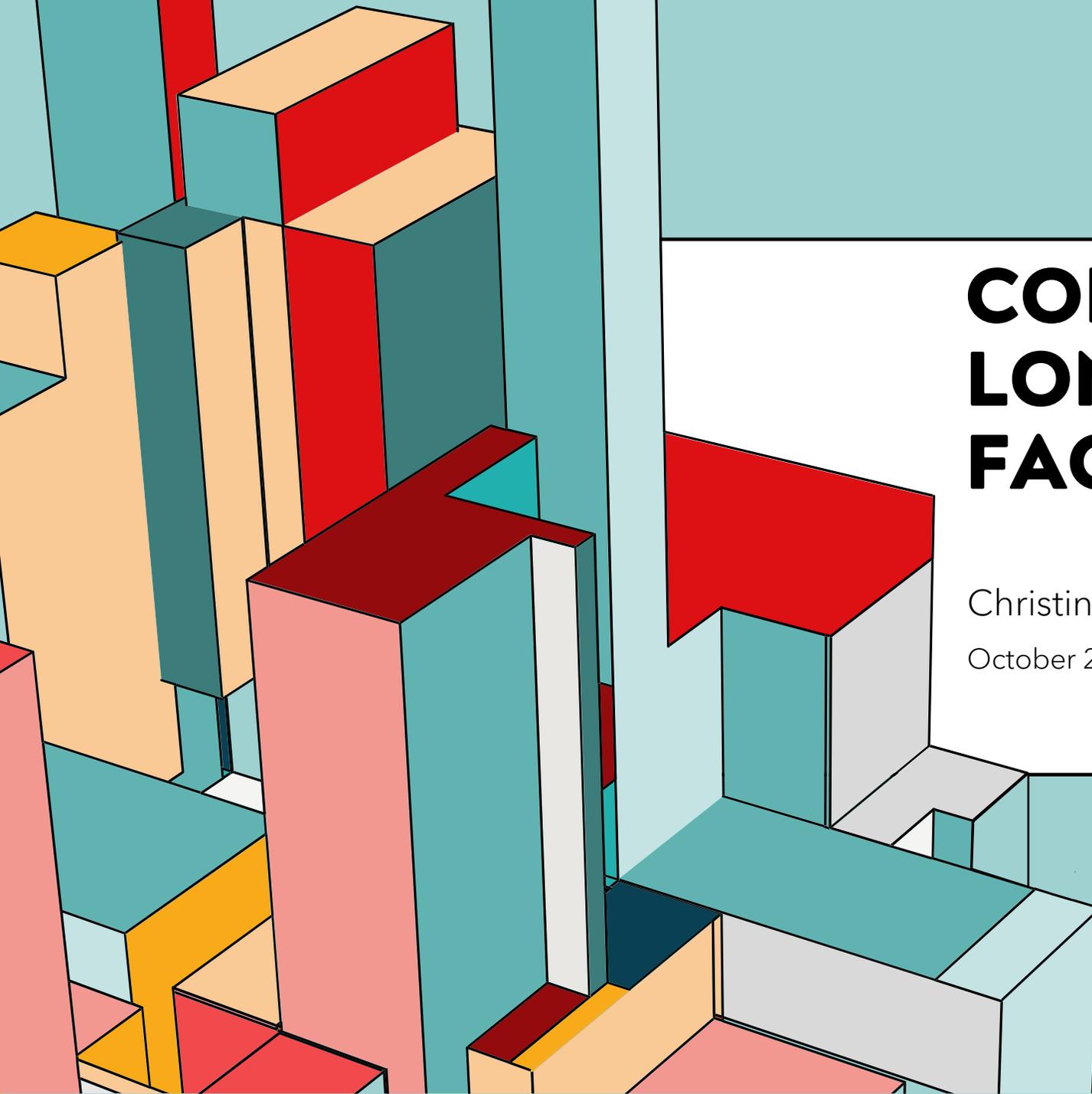
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COVID-19 vaccine can prevent COVID-19 disease. Vaccination can help reduce the severity of COVID-19 disease if you get sick.

COVID-19 is caused by a coronavirus called SARS-CoV-2 that spreads easily from person to person. COVID-19 can cause mild to moderate illness lasting only a few days, or severe illness requiring hospitalization, intensive care, or a ventilator to help with breathing. COVID-19 can result in death.

If an infected person has symptoms, they may appear 2 to 14 days after exposure to the virus. Anyone can have mild to severe symptoms.

- Possible symptoms include fever or chills, cough, shortness of breath or difficulty breathing, fatigue



# **CONSTRUCTION IN LONG-TERM CARE FACILITIES**

Christine Pate, MLS, MPH, CIC

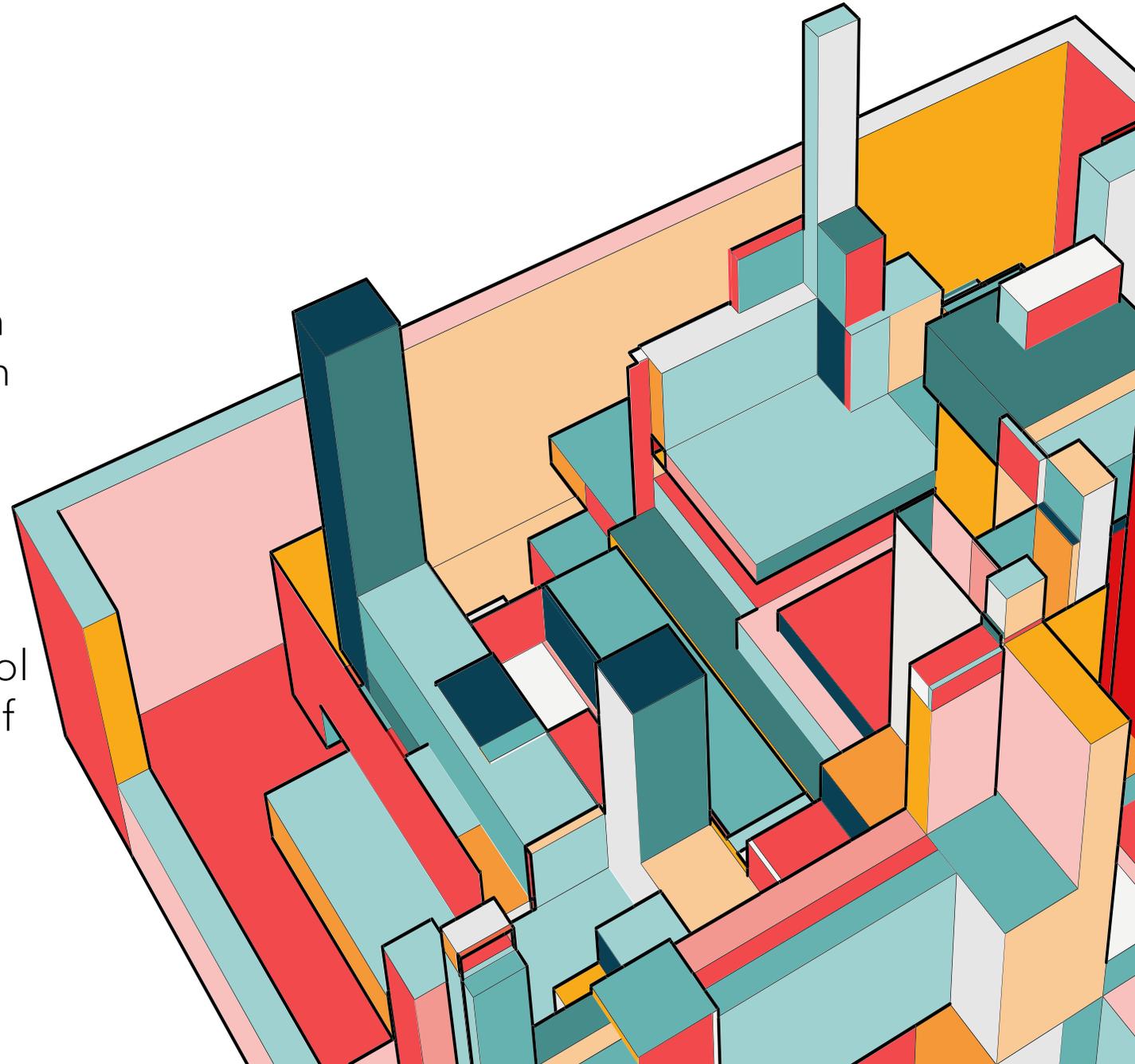
October 27, 2023

# **DISCLOSURES**

I have no relevant financial interest or relationships to disclose.

# OBJECTIVES

- Address the role of Infection Prevention in the LTCF environment during construction and renovation
- Review the background and regulatory aspects of the Infection Control Risk Assessment (ICRA)
- Review the environmental Infection Control guidelines and strategies for prevention of environmentally-mediated infections and contaminants



# KEY CONCEPTS

- The Infection Control Risk Assessment (ICRA) and mitigation recommendations are important components of the infection prevention program
- Infection prevention leadership is essential in the planning, construction, and renovation to protect the wellbeing of patients/resident, staff, and visitors.

# BACKGROUND

- In 1996, the Guidelines for the Design and Construction of Hospital and Healthcare Facilities used the term ICRA as a method to plan IC needs when designing, constructing, or renovating healthcare facilities
- Not all authorities with jurisdiction over healthcare construction use the FGI Guidelines
  - Illinois is one of only 3 states that have not adopted FGI Guidelines
- The Joint Commission (TJC) use the FGI Guidelines to varying degrees for evaluation healthcare construction
- In 2003, the Centers for Disease Control and Prevention (CDC) included recommendations in their Guidelines for Environmental Infection Control in Healthcare Facilities, for infection control during construction and renovation (containment barriers, waterborne pathogens, airborne particle counting)

# ILLINOIS REGULATIONS

## ADMINISTRATIVE CODE

**TITLE 77: PUBLIC HEALTH**  
**CHAPTER I: DEPARTMENT OF PUBLIC HEALTH**  
**SUBCHAPTER c: LONG-TERM CARE FACILITIES**  
**PART 300 SKILLED NURSING AND INTERMEDIATE CARE FACILITIES CODE**  
**SECTION 300.2910 STRUCTURAL**

### Section 300.2910 Structural

- a) General Design Requirements
  - 1) The buildings and all parts thereof shall be of sufficient strength to support all dead, live, and lateral loads without exceeding the working stresses permitted for the materials of their construction in generally accepted good engineering practice. (B)
  - 2) Special provision shall be made for loads which have a greater load than the specified minimum live load, including partitions which are subject to change of location. (B)
- b) Construction shall be in accordance with the requirements of National Fire Protection Association Standard 101, Life Safety Code, and the minimum requirements contained herein. (A, B)

## ADMINISTRATIVE CODE

**TITLE 77: PUBLIC HEALTH**  
**CHAPTER I: DEPARTMENT OF PUBLIC HEALTH**  
**SUBCHAPTER c: LONG-TERM CARE FACILITIES**  
**PART 300 SKILLED NURSING AND INTERMEDIATE CARE FACILITIES CODE**  
**SECTION 300.2820 COMPLIANCE WITH LOCAL CODES AND STANDARDS**

### Section 300.2820 Compliance with Local Codes and Standards

- a) In addition to compliance with the standards set forth in this Part, all building codes, ordinances and regulations that are enforced by city, county or other local jurisdictions in which the facility is, or will be, located shall be observed.
- b) If no local building code exists, the recommendations of the International Building Code shall apply.
- c) The local building code or the recommendations of the International Building Code shall apply insofar as its recommendations are not in conflict with the standards set forth in this Part, or with the NFPA 101.

(Source: Amended at 45 Ill. Reg. 11096, effective August 27, 2021)



# BASIC PRINCIPLES

- The ICRA Process
- ICRA Matrix
- Mitigation Activities

# INFECTION CONTROL RISK ASSESSMENT (ICRA)

- Provides a process for evaluation and addressing potential infection risks created by construction in healthcare facilities
- Must address construction design elements related to infection prevention, as well as the infection risk posed by the construction work
- Should be completed by a team that includes representatives from infection prevention, safety, engineering, and healthcare professionals representing the areas of the facility likely to be affected by the construction
- Additional experts in ventilation, plumbing, specialty materials, and equipment may be necessary to address specifics depending on the scope of the project
- The ICRA along with other risk assessments is a component of the Safety Risk Assessment (SRA)

# THE IP'S ROLE:

- Assist in participation of the ICRA process throughout the stages of the construction project.
- Assist with identifying the potential infection risks and developing a written Infection Control Risk Mitigation Recommendations (ICRMR).
- Assess the needs and risks of the patient/resident, staff, and visitor population that will be affected.
- Address the infection prevention needs of the patients and staff that will occupy the space after construction.
- Ensure safety and compliance (ICRA) at the project site with routine rounding throughout the project.
- Provide evidence-based guidance on infection prevention to the project design team.

# ICRA PROCESS

- Begin the ICRA process early in the project planning phases to ensure that plans and drawings accurately incorporate the recommendations of the ICRA team.
- The ICRA should influence infection prevention and patient safety aspects of the facility design, describe the procedures to prevent exposure to infection risks from construction activities, and provide for the selection and locations of equipment and surfacing materials to manage infection risk in the completed facility.

## Templates:

- [Optimizing Health Care Facilities | ASHE](#)
- [ASHE ICRA 2 TM form 0.pdf](#)
- [Your Total Quality and Safety Resource | Joint Commission Resources \(jcrinc.com\)](#)
- [Home - APIC](#)

# ICRA- DESIGN PHASE:

The design portion of the ICRA must at least address:

- Special heating, air conditioning, or other ventilation needs
- The number, location and types of handwashing stations and ABHR dispensers, when required by guidelines or the risk assessment
- Risk assessment for waterborne pathogens, and measures to mitigate the risks
- Selection of surface finishing and furnishing materials

# ICRA- DESIGN PHASE:



## Water and Plumbing System Issues

- Handwashing Stations - FGI Guidelines establish the minimum number, types, and locations of handwashing stations, with the need for additional stations determined by the ICRA
- Design should include:
  - materials and installation to ensure ease and effectiveness of cleaning and disinfection, and control splashing

## Plumbing and Waterborne Pathogens

- ICRA team should include representation from the facility's water management team to assist in:
  - Evaluating the potential impacts of the construction to the water management plan
  - Discuss procedures and schedule used for flushing and disinfecting the system prior to occupancy when construction is completed
  - May request routine flowing of water lines not used

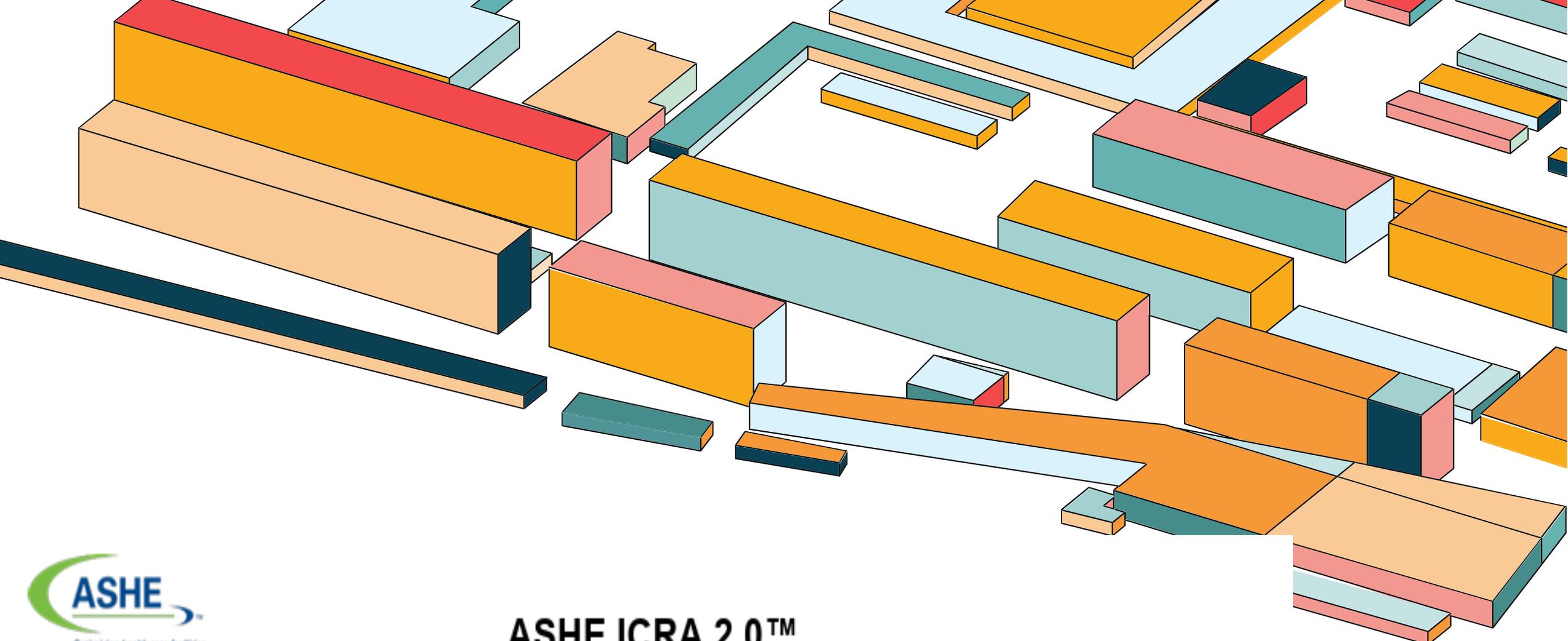
# PLUMBING & WATERBORNE PATHOGENS

- In addition to FGI Guidelines, consider including the CMS memorandum on the requirement to reduce Legionella risk in healthcare facility water systems
  - Includes section addressing construction and renovation, and discusses the role of the facility water management team
- Bacterial and fungal contamination risks are associated with drinking water: Pseudomonas, Acinetobacter, Moraxella, Aeromonas, Xanthomonas, Legionella, Aspergillus, Fusarium spp., atypical (non-tuberculosis) Mycobacteria
- Associated with serious disease and can be potentially transmitted from faucets, sinks, or inhalation of aerosols, such as those generated from construction activities.

# ICRA- DESIGN PHASE:

## Surface Finishing and Furnishing Materials

- FGI Guidelines requires the ICRA to include selection of surface finishes and furnishing materials, during the planning phase:
  - Surfaces are durable and compatible with the facility's cleaning and disinfection practices and resistant to moisture; impermeable to body fluids (particularly in patient care areas)
- Requires walls to be washable, and those near plumbing fixtures to be scrubbable and resistant to water damage.
- All flooring selections should be cleanable and durable
- Carpet can be preferred choice in lobbies and high traffic locations (for sound & trapping dust)
  - Not appropriate in areas where spills and soiling are likely (i.e., body fluids)
  - Must have impermeable backing and welded seams to prevent any spilled liquids from reaching subfloor



# ASHE ICRA 2.0™

## Matrix of Precautions for Construction, Renovation and Operations

[ASHE ICRA 2 TM form 0.pdf](#)

<p><b>Type A</b></p>	<p><b>Inspection and non-invasive activities.</b> Includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Removal of ceiling tile for visual inspection-limited to 1 tile per 50 square feet with limited exposure time.</li> <li>• Limited building system maintenance (e.g., pneumatic tube station, HVAC system, fire suppression system, electrical and carpentry work to include painting without sanding) that does not create dust or debris.</li> <li>• Clean plumbing activity limited in nature.</li> </ul>
<p><b>Type B</b></p>	<p><b>Small-scale, short duration activities that create minimal dust and debris.</b> Includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Work conducted above the ceiling (e.g., prolonged inspection or repair of firewalls and barriers, installation of conduit and/or cabling, and access to mechanical and/or electrical chase spaces).</li> <li>• Fan shutdown/startup.</li> <li>• Installation of electrical devices or new flooring that produces minimal dust and debris.</li> <li>• The removal of drywall where minimal dust and debris is created.</li> <li>• Controlled sanding activities (e.g., wet or dry sanding) that produce minimal dust and debris.</li> </ul>
<p><b>Type C</b></p>	<p><b>Large-scale, longer duration activities that create a moderate amount of dust and debris.</b> Includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Removal of preexisting floor covering, walls, casework or other building components.</li> <li>• New drywall placement.</li> <li>• Renovation work in a single room.</li> <li>• Non-existing cable pathway or invasive electrical work above ceilings.</li> <li>• The removal of drywall where a moderate amount of dust and debris is created.</li> <li>• Dry sanding where a moderate amount of dust and debris is created.</li> <li>• Work creating significant vibration and/or noise.</li> <li>• Any activity that cannot be completed in a single work shift.</li> </ul>
<p><b>Type D</b></p>	<p><b>Major demolition and construction activities.</b> Includes but is not limited to:</p> <ul style="list-style-type: none"> <li>• Removal or replacement of building system component(s).</li> <li>• Removal/installation of drywall partitions.</li> <li>• Invasive large-scale new building construction.</li> <li>• Renovation work in two or more rooms.</li> </ul>

# STEP 2:

Table 2 - Patient Risk Group:  

<b>Low Risk</b>  <b>Non-patient care areas such as:</b>	<b>Medium Risk</b>  <b>Patient care support areas such as:</b>	<b>High Risk</b>  <b>Patient care areas such as:</b>	<b>Highest Risk</b>  <b>Procedural, invasive, sterile support and highly compromised patient care areas such as:</b>
<ul style="list-style-type: none"> <li>• Public hallways and gathering areas not on clinical units.</li> <li>• Office areas not on clinical units.</li> <li>• Breakrooms not on clinical units.</li> <li>• Bathrooms or locker rooms not on clinical units.</li> <li>• Mechanical rooms not on clinical units.</li> <li>• EVS closets not on clinical units.</li> </ul>	<ul style="list-style-type: none"> <li>• Waiting areas.</li> <li>• Clinical engineering.</li> <li>• Materials management.</li> <li>• Sterile processing department - dirty side.</li> <li>• Kitchen, cafeteria, gift shop, coffee shop, and food kiosks.</li> </ul>	<ul style="list-style-type: none"> <li>• Patient care rooms and areas</li> <li>• All acute care units</li> <li>• Emergency department</li> <li>• Employee health</li> <li>• Pharmacy - general work zone</li> <li>• Medication rooms and clean utility rooms</li> <li>• Imaging suites: diagnostic imaging</li> <li>• Laboratory.</li> </ul>	<ul style="list-style-type: none"> <li>• All transplant and intensive care units.</li> <li>• All oncology units.</li> <li>• OR theaters and restricted areas.</li> <li>• Procedural suites.</li> <li>• Pharmacy compounding.</li> <li>• Sterile processing department - clean side.</li> <li>• Transfusion services.</li> <li>• Dedicated isolation wards/units.</li> <li>• Imaging suites: invasive imaging.</li> </ul>

# STEP 3:

Table 3 - Class of Precautions:  

Patient Risk Group	Project Type			
	TYPE A	TYPE B	TYPE C	TYPE D
LOW Risk Group	I	II	II	III*
MEDIUM Risk Group	I	II	III*	IV
HIGH Risk Group	I	III	IV	V
HIGHEST Risk Group	III	IV	V	V

# STEP 4:

**Table 4 - Surrounding Area Assessment**

Unit Below:	Unit Above:	Unit Lateral:	Unit Behind:	Unit in Front:
Risk Group:	Risk Group:	Risk Group:	Risk Group:	Risk Group:
Contact:	Contact:	Contact:	Contact:	Contact:
Phone:	Phone:	Phone:	Phone:	Phone:
<b>Additional Controls:</b> <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevators/Stairs	<b>Additional Controls:</b> <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevators/Stairs	<b>Additional Controls:</b> <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevators/Stairs	<b>Additional Controls:</b> <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevators/Stairs	<b>Additional Controls:</b> <input type="checkbox"/> Noise <input type="checkbox"/> Vibration <input type="checkbox"/> Dust control <input type="checkbox"/> Ventilation <input type="checkbox"/> Pressurization <input type="checkbox"/> Vertical Shafts <input type="checkbox"/> Elevators/Stairs
<b>Systems impacted:</b> <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	<b>Systems impacted:</b> <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	<b>Systems impacted:</b> <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	<b>Systems impacted:</b> <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water	<b>Systems impacted:</b> <input type="checkbox"/> Data <input type="checkbox"/> Mechanical <input type="checkbox"/> Med Gases <input type="checkbox"/> Hot/Cold Water
<b>Noise &amp; Vibration Mitigation Strategies</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Use diamond drills instead of powder-actuated fasteners.</li> <li><input type="checkbox"/> Schedule noise-making periods with adjacent spaces.</li> <li><input type="checkbox"/> Use beam clamps instead of shot.</li> <li><input type="checkbox"/> Prefab where possible.</li> <li><input type="checkbox"/> Use tin snips to cut metal studs instead of using a chop saw.</li> <li><input type="checkbox"/> Install metal decking with vent tabs, then use cellular floor deck hangers.</li> <li><input type="checkbox"/> Consider compression style fittings instead of soldering, brazing or welding.</li> <li><input type="checkbox"/> Wet core drill instead of dry core or percussion.</li> <li><input type="checkbox"/> Instead of jackhammering concrete, use wet diamond saws.</li> <li><input type="checkbox"/> Use HEPA vacuums instead of standard wet/dry vacuums.</li> <li><input type="checkbox"/> Use mechanical joining system sprinkler fittings instead of threaded.</li> <li><input type="checkbox"/> Where fumes are tolerated, use chemical adhesive remover (flooring glue) instead of mechanical.</li> <li><input type="checkbox"/> To remove flooring, consider abrasive blasting instead of using a floor scraper.</li> <li><input type="checkbox"/> Use electric sheers instead of reciprocating saw for ductwork cutting.</li> <li><input type="checkbox"/> Install exterior man/material lifts.</li> </ul>				
<b>Ventilation &amp; Pressurization Mitigation Strategies</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> HEPA to exterior.</li> <li><input type="checkbox"/> Install temporary ductwork.</li> <li><input type="checkbox"/> Utilize temporary HVAC equipment.</li> <li><input type="checkbox"/> Vacate the area.</li> <li><input type="checkbox"/> Install temporary partitions.</li> <li><input type="checkbox"/> Use carbon filtration to filter odors.</li> </ul>				
<b>Impact to Other Systems Mitigation Strategies</b> <ul style="list-style-type: none"> <li><input type="checkbox"/> Schedule outages.</li> <li><input type="checkbox"/> Provide temporary systems.</li> <li><input type="checkbox"/> Back-feed electricity or medical gases.</li> </ul>				

## Infection Control Risk Assessment 2.0

### Matrix of Precautions for Construction, Renovation and Operations

**Table 5 - Minimum Required Infection Control Precautions by Class | Before and During Work Activity**

Class of Precautions	Mitigation Activities (Performed Before and During Work Activity)
<b>Class I</b>	<ol style="list-style-type: none"> <li>1. Perform noninvasive work activity as to not block or interrupt patient care.</li> <li>2. Perform noninvasive work activities in areas that are not directly occupied with patients.</li> <li>3. Perform noninvasive work activity in a manner that does not create dust.</li> <li>4. Immediately replace any displaced ceiling tile before leaving the area and/or at end of noninvasive work activity.</li> </ol>
<b>Class II</b>	<ol style="list-style-type: none"> <li>1. Perform only limited dust work and/or activities designed for basic facilities and engineering work.</li> <li>2. Perform limited dust and invasive work following standing precautions procedures approved by the organization.</li> <li>3. This Class of Precautions must never be used for construction or renovation activities.</li> </ol>
<b>Class III</b>	<ol style="list-style-type: none"> <li>1. Provide active means to prevent airborne dust dispersion into the occupied areas.</li> <li>2. Means for controlling minimal dust dispersion may include hand-held HEPA vacuum devices, polyethylene plastic containment, or isolation of work area by closing room door.</li> <li>3. Remove or isolate return air diffusers to avoid dust from entering the HVAC system.</li> <li>4. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.</li> <li>5. If work area is contained, then it must be neutrally to negatively pressurized at all times.</li> <li>6. Seal all doors with tape that will not leave residue.</li> <li>7. Contain all trash and debris in the work area.</li> <li>8. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the construction areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area.</li> <li>9. Install an adhesive (dust collection) mat at entrance of contained work area based on facility policy. Adhesive mats must be changed routinely and when visibly soiled.</li> <li>10. Maintain clean surroundings when area is not contained by damp mopping or HEPA vacuuming surfaces.</li> </ol>
<b>Class IV</b>	<ol style="list-style-type: none"> <li>1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers must extend to the ceiling or, if ceiling tile is removed, to the deck above, and all penetrations through the barrier shall meet the appropriate fire rating requirements.</li> <li>2. All (plastic or hard) barrier construction activities must be completed in a manner that prevents dust release. Plastic barriers must be effectively affixed to ground and ceiling and secure from movement or damage. Apply tape that will not leave a residue to seal gaps between barriers, ceiling or floor.</li> <li>3. Seal all penetrations in containment barriers, including floors and ceiling, using approved materials (UL schedule firestop if applicable for barrier type).</li> <li>4. Containment units or environmental containment units (ECUs) approved for Class IV precautions in small areas totally contained by the unit and that has HEPA-filtered exhaust air.</li> <li>5. Remove or isolate return air diffusers to avoid dust entering the HVAC system.</li> <li>6. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.</li> <li>7. Negative airflow pattern must be maintained from the entry point to the anteroom and into the</li> </ol>

**Class v**

1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barrier shall extend to the ceiling, or if ceiling tile is removed, to the deck above, and all penetrations through the barrier shall meet the appropriate fire rating requirements.
2. All (plastic or hard) barrier construction activities must be completed in a manner that prevents dust release. Plastic barriers must be effectively affixed to ground and ceiling and secure from movement or damage. Apply tape that will not leave a residue to seal gaps between barriers, ceiling or floor.
3. Seal all penetrations in containment barriers, anteroom barriers, including floors and ceiling using approved materials (UL schedule firestop if applicable for barrier type).
4. Construct anteroom large enough for equipment staging, cart cleaning, workers. The anteroom must be constructed adjacent to entrance of construction work area.
5. Personnel will be required to wear disposable coveralls at all times during Class V work activities. Disposable coveralls must be removed before leaving the anteroom.
6. Remove or isolate return air diffusers to avoid dust entering the HVAC system.
7. Remove or isolate the supply air diffusers to avoid positive pressurization of the space.
8. Negative airflow pattern must be maintained from the entry point to the anteroom and into the construction area. The airflow must cascade from outside to inside the construction area. The entire construction area must remain negatively pressurized.
9. Maintain negative pressurization of the entire workspace using HEPA exhaust air systems directed outdoors. Exhaust discharged directly to the outdoors that is 25 feet or greater from entrances, air intakes and windows does not require HEPA-filtered air.
10. If exhaust is directed indoors, then the system must be HEPA filtered. Prior to start of work, HEPA filtration must be verified by particulate measurement as no less than 99.97% efficiency and must not alter or change airflow/pressure relationships in other areas.
11. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (bathroom exhaust) is not acceptable.
12. Install device on exterior of work containment to continually monitor negative pressurization. To assure proper pressure is continuously maintained, it is recommended that the device(s) have a visual pressure indicator.
13. Contain all trash and debris in the work area.
14. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the construction areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area.
15. Worker clothing must be clean and free of visible dust before leaving the work area anteroom.
16. Workers must wear shoe covers prior to entry into the work area. Shoe covers must be changed prior to exiting the anteroom to the occupied space (non-work area). Damaged shoe covers must be immediately changed.
17. Install an adhesive (dust collection) mat at entrance of contained work area based on facility policy. Adhesive mats must be changed routinely and when visibly soiled.
18. Consider collection of particulate data during work to monitor and ensure that contaminants do not enter the occupied spaces. Routine collection of particulate samples may be used to verify HEPA filtration efficiencies.

# MITIGATION ACTIVITIES

Performed upon Completion of Work Activity

Class of Precautions: I, II, III

- Cleaning:
  1. Clean work areas including all environmental surfaces, high horizontal surfaces and flooring materials.
  2. Check all supply and return air registers for dust accumulation on upper surfaces as well as air.
- HVAC Systems:
  1. Remove isolation of HVAC system in areas where work is being performed. Verify that HVA systems are clean and operational
  2. Verify the HVAC systems meet original airflow and air exchange design specifications

# MITIGATION ACTIVITIES

Class III (Type C Activities), IV, and V precautions require inspection and documentation for downgraded ICRA precautions.

## Class of Precautions: I, IV, V

Construction areas must be inspected by an IP or designee and engineering representative

- Work Area Cleaning:
  1. Clean work areas including all environmental surfaces, high horizontal surfaces and flooring materials.
  2. Check all supply and return air registers for dust accumulation on upper surfaces as well as air.
- Removal of Critical Barriers:
  1. Critical barriers must remain in place during all work involving drywall removal, creation of dust
  2. Verify the HVAC systems meet original airflow and air exchange design specifications

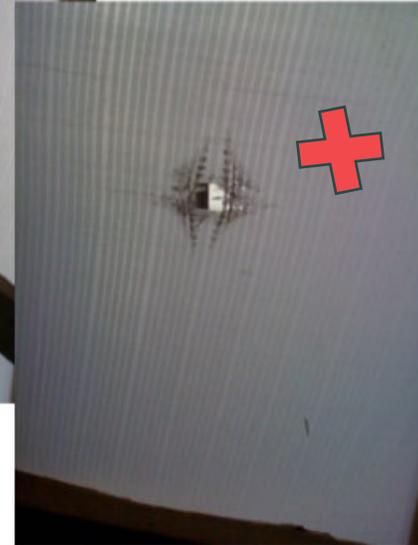
# CONSTRUCTION RISKS

- Risks from construction work in facilities come primarily from mold spores carried by air movement and waterborne pathogens in plumbing systems
- Flooding caused by construction can damage materials inside and outside of construction zones.
  - Ensure location of water shutoff valves prior to work or near plumbing fixtures
- Develop a plan with written ICRMRs for anticipated risks

# CONTAINMENT

- Construction work zones may have a barrier system installed around them to contain any dust as well as potentially infectious microorganisms
- Barriers may be constructed of flame-retardant plastic sheeting, rigid plastic panels, or drywall board.
- Containment materials for barriers must be compliant with the version of the National Fire Protection Association (NFPA) Life Safety Code, locally enforced by your jurisdiction.
- Containment barriers in spaces that are not actively sprinkled spaces must be 1-hour fire-rated walls.
  - In actively sprinkled spaces, the containment barriers do not have to be fire rated.

# CONTAINMENT BARRIERS



# VENTILATION SYSTEM

- Seal air supply and return grills located within a contained construction space to prevent contamination of other areas in the same ventilation zone (and prevent interfering with establishing negative pressure).
- Ensure active return air ducts through the construction site do not leak or wrap them in plastic sheeting to prevent any leaks into the duct.
- Exhaust systems with fans in the building pushing air out the duct should be shut off and sealed to prevent any leaks from spreading contamination within the contained space.

# NEGATIVE PRESSURE

- Negative air pressure is created by exhausting air from the contained workspace
- Creating a negative pressure in the contained work zone helps to prevent the release of airborne infectious agents
- Exhausting air outdoors or to a different ventilation zone can affect the ventilation balance of the occupied spaces adjacent to the contained work zone.
- Measure the negative air pressure differential between the contained space and the adjacent spaces and log the results to document negative pressure

## Containment Units

For smaller jobs and work above ceilings, portable containment units are available that incorporate the containment barrier and negative air machine

# DUST CONTROL

When possible, establish a dedicated traffic route away from debris

## Tracked Dust

- Workers should clean loose dust from clothes and tools before leaving the contained workspace
  - A HEPA-filtered vacuum works well
- Workers can put on shoe covers before leaving the contained work zone to control dust
- Tacky mats placed at the exits from the workspace can help to prevent dust from shoes and wheels on equipment.
- A trash chute is preferred for removing debris (upper floors), or use of tightly covered carts
  - Exterior of carts must be cleaned before leaving the containment
- Transport should occur during lowest activity periods (using traffic route planned during the ICRA process)



# DUST CONTROL



## Particle Counters

- Laser particle counters are recommended for monitoring the effectiveness of construction containment
- A significant increase near the site relative to surrounding may indicate a breach/leak
- There are no established safe or unsafe particle levels, and the level of particles may vary with activity

## HEPA-filtered Vacuums

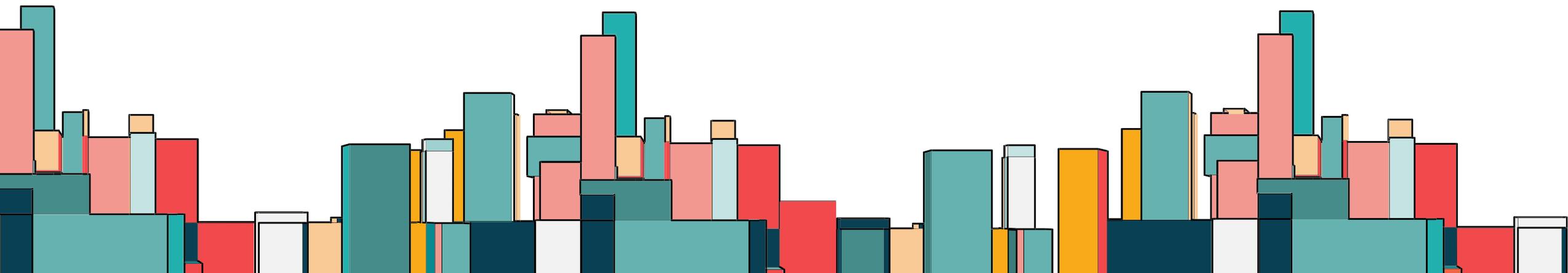
- HEPA-filtered vacuums are useful for controlling dust and cleaning up
- Select a HEPA-filtered vacuum with certification on the filter indicating testing to capture 0.3-micron particles at a minimum efficiency of 99.97%.

## Outdoor projects

- Consider location of building air intakes, construction can generate airborne contaminants

# AFTER CONSTRUCTION

- The ICRA should detail how the containment barriers are to be removed and construction space cleaned
- EVS should perform a routine cleaning
- Check the ventilation system to ensure its balanced and operating accordingly
- Clean any ducts that were not adequately sealed and became contaminated with construction dust



# KEY TAKEAWAYS

**The IP has an important role in the both the design and construction phases of healthcare facilities**

**The ICRA provides a process for evaluation and addressing potential infection risks created by construction in healthcare facilities**

**Begin the ICRA process early in the project planning phases to ensure that plans accurately incorporate the recommendations of the ICRA team**

# CITATIONS

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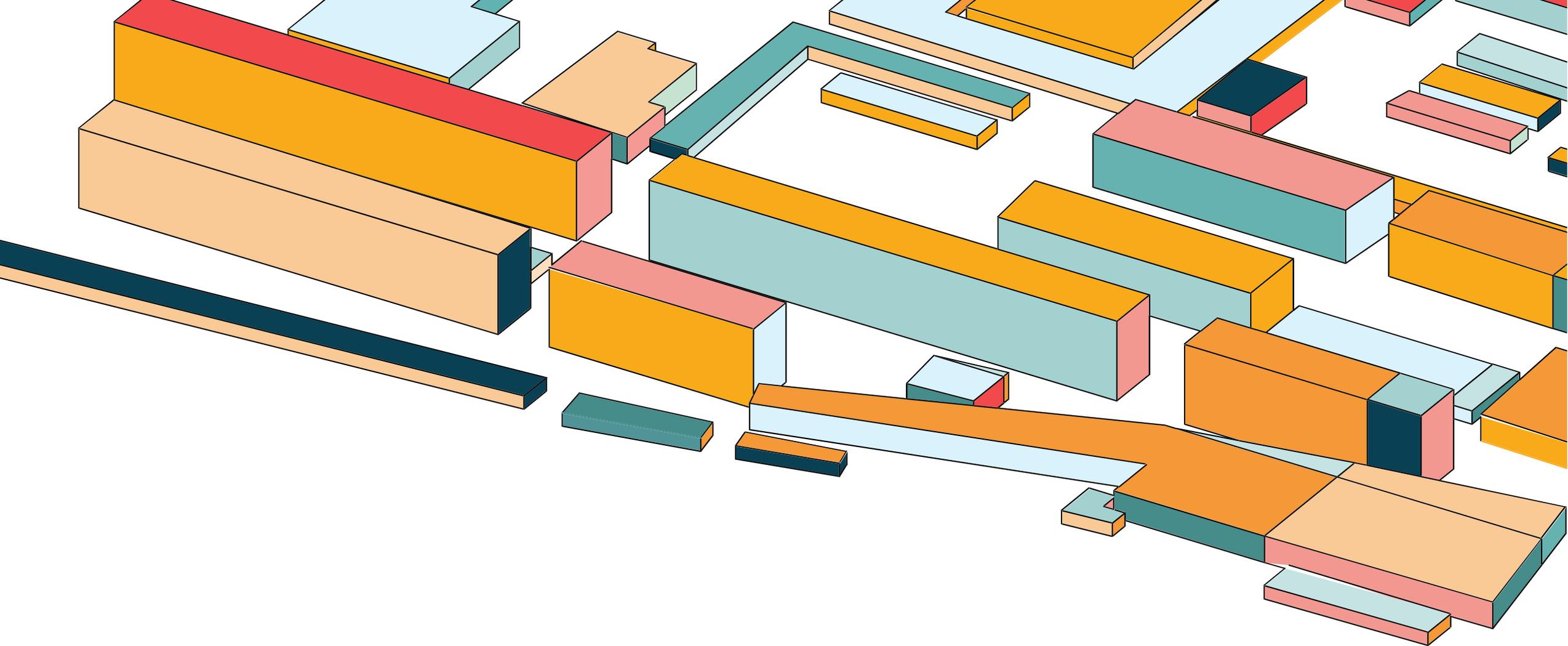
The CDC Guidelines for Environmental Infection Control in Healthcare Facilities [environmental-guidelines-P.pdf \(cdc.gov\)](#)

Joint Commission Resources. [\*\*Infection Prevention and Control Issues in the Environment of Care. Revised 3rd ed.\*\*](#) Oakbrook Terrace, IL: Joint Commission Resources; 2017.

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**THANK YOU**

# Open Q&A

Submit questions via Q&A pod to **All Panelists**

**Please do not resubmit a single question multiple times**

Slides and recording will be made available after the session.

# Reminders

- For continuing education credit, please fill out the evaluation survey upon end of webinar
- SIREN Registration
  - To receive situational awareness from IDPH, please use this link to guide you to the correct registration instructions for your public health related classification: <http://www.dph.illinois.gov/siren>
- Telligen Resources:
  - Project Firstline Trainings: <https://www.telligenqiconnect.com/infectionpreventionandcontrol/>
  - Contact Telligen: **nursinghome@telligen.com**