

## Infection Prevention Risk Assessment Matrix of Precautions for Construction & Renovation

**Step One:**

Using the following table, *identify* the **Type of Construction Project Activity (Type A-D)**

<b>TYPE A</b>	<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 tiles for visual inspection limited to 1 tile per 50 square feet</li> <li>▪ painting (but not sanding)</li> <li>▪ wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.</li> </ul>
<b>TYPE B</b>	<p><b>Small scale, short duration activities which create minimal dust</b> Includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ installation of telephone and computer cabling</li> <li>▪ opening of no more than 1 tile per 10 square feet</li> <li>▪ access to chase spaces</li> <li>▪ cutting of walls or ceiling where dust migration can be controlled.</li> <li>▪ minor renovation of existing space</li> <li>▪ wet sanding of walls</li> <li>▪ floor covering removal (<b>without</b> sanding or grinding)</li> </ul>
<b>TYPE C</b>	<p><b>Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies</b> Includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ dry sanding of walls for painting or wall covering</li> <li>▪ removal of floor coverings (with sanding), ceiling tiles and casework</li> <li>▪ cutting of walls, removal of drywall or building finishes where work is limited to one room or suite</li> <li>▪ new wall construction</li> <li>▪ minor duct work, plumbing work, or electrical work above ceilings (not including system demolition or installation)</li> <li>▪ moderate renovation of existing space</li> <li>▪ major cabling activities</li> <li>▪ any activity which cannot be completed within a single workshift.</li> </ul>
<b>TYPE D</b>	<p><b>Major demolition and construction projects</b> Includes, but is not limited to:</p> <ul style="list-style-type: none"> <li>▪ activities which require the closure of a unit/wing or relocation of an entire area</li> <li>▪ activities which require consecutive work shifts</li> <li>▪ demolition, removal, or installation of a complete cabling, HVAC, plumbing, medical gas, or electrical system</li> <li>▪ demolition of major fixed building components, assemblies, fit-out elements, or structural elements</li> <li>▪ new construction located in close proximity (as determined by the ICRA team) of the hospital building</li> <li>▪ outdoor construction of new structures located in close proximity to existing patient care facility</li> <li>▪ excavation activities within close proximity of hospital building.</li> <li>▪ new construction.</li> </ul>

**Step Two:**

Using the following table, *identify the Patient Risk Groups* that will be affected.

If more than one risk group will be affected, select the higher risk group:

Low Risk	Medium Risk	High Risk	Highest Risk
<ul style="list-style-type: none"> <li>▪ Office areas</li> <li>▪ Mechanical spaces</li> </ul>	<ul style="list-style-type: none"> <li>▪ Cardiology</li> <li>▪ Echocardiography</li> <li>▪ Endoscopy</li> <li>▪ Nuclear Medicine</li> <li>▪ Physical Therapy</li> <li>▪ Radiology/MRI/CT/PET</li> <li>▪ Respiratory Therapy</li> <li>▪ Primary care spaces</li> <li>▪ Community Based outpatient clinics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Emergency Room</li> <li>▪ Laboratories (specimen)</li> <li>▪ Outpatient Surgery</li> <li>▪ Pediatrics</li> <li>▪ Pharmacy</li> <li>▪ Post Anesthesia Care Unit</li> <li>▪ Surgical Units</li> <li>▪ Central Sterile supply storage</li> <li>▪ Canteen/Kitchen</li> </ul>	<ul style="list-style-type: none"> <li>▪ Any area caring for immunocompromised patients</li> <li>▪ Cardiac Cath Lab</li> <li>▪ Sterile Processing</li> <li>▪ Intensive Care Units</li> <li>▪ Medical Units</li> <li>▪ Negative pressure isolation rooms</li> <li>▪ Oncology</li> <li>▪ Operating rooms</li> <li>▪ PACU</li> <li>▪ Community Living Center</li> </ul>

Step 2 \_\_\_\_\_

**Step Three: Match the**

**Patient Risk Group** (*Low, Medium, High, Highest*) with the planned ...

**Construction Project Type** (*A, B, C, D*) on the following matrix, to find the ...

**Class of Precautions** (*I, II, III or IV*) or level of infection control activities required.

**Class I-IV or Color-Coded Precautions** are delineated on the following page.

**IC Matrix - Class of Precautions: Construction Project by Patient Risk**

Patient Risk Group	Construction Project Type			
	TYPE A	TYPE B	TYPE C	TYPE D
<b>LOW</b> Risk Group	I	II	II	III/IV
<b>MEDIUM</b> Risk Group	I	II	III	IV
<b>HIGH</b> Risk Group	I	II	III/IV	IV
<b>HIGHEST</b> Risk Group	II	III/IV	III/IV	IV

**Note:** Infection Prevention approval will be required when the Construction Activity and Risk Level indicate that **Class III** or **Class IV** control procedures are necessary.

Step 3 \_\_\_\_\_



**Step 4. Identify the areas surrounding the project area, assessing potential impact**

Unit Below	Unit Above	Lateral	Lateral	Behind	Front
Risk Group	Risk Group	Risk Group	Risk Group	Risk Group	Risk Group

**Step 5. Identify specific site of activity eg, patient rooms, medication room, etc.**

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**Step 6. Identify issues related to: ventilation, plumbing, electrical in terms of the occurrence of probable outages.** \_\_\_\_\_

**Step 7. Identify containment measures, using prior assessment. What types of barriers? (Eg, solids wall barriers); Will HEPA filtration be required?**

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(Note: Renovation/construction area shall be isolated from the occupied areas during construction and shall be negative with respect to surrounding areas)

**Step 8. Consider potential risk of water damage. Is there a risk due to compromising structural integrity? (eg, wall, ceiling, roof)**

**Step 9. Work hours: Can or will the work be done during non-patient care hours?**

**Step 10. Do plans allow for adequate number of isolation/negative airflow rooms?**

**Step 11. Do the plans allow for the required number & type of handwashing sinks?**

**Step 12. Does the infection control staff agree with the minimum number of sinks for this project?**  
(Verify against AIA Guidelines for types and area)

**Step 13. Does the infection control staff agree with the plans relative to clean and soiled utility rooms?**

**Step 14. Plan to discuss the following containment issues with the project team.**  
**Eg, traffic flow, housekeeping, debris removal (how and when),**

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<p><i>Appendix: Identify and communicate the responsibility for project monitoring that includes infection control concerns and risks. The ICRA may be modified throughout the project. Revisions must be communicated to the Project Manager</i></p>
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## Infection Prevention Construction Permit

<b>Construction Class:</b> I, II, III, IV <b>Project Name and Number:</b> <b>Location of Construction:</b> <b>Contractor Performing Work:</b> <b>FMSS Project Engineer:</b>	<b>Type:</b> A, B, C, D  <b>Risk Group:</b> Low, Medium, High, Highest <b>Permit #:</b>  <b>Project start date:</b>  <b>Estimate completion date:</b>  <b>Telephone:</b>	
Type A: Inspection and non-invasive activities, minimal dust levels Type B: Small scale, short duration moderate dust level Type C: Generates moderate to high levels of dust Type D: Major duration and construction activities requiring consecutive work shift		
<b>CLASS I</b>	<ol style="list-style-type: none"> <li>1. Work performed is limited to inspections and minor installations.</li> <li>2. Execute work by methods to minimize raising dust from inspection operations.</li> <li>3. Immediately replace ceiling tiles displaced for visual inspection. Only 3-5tiles may be removed at one time</li> <li>4. Permit does not need to be posted for this classification.</li> </ol>	
<b>CLASS II</b>	<ol style="list-style-type: none"> <li>1. Obtain and post infection control permit at work location before work begins.</li> <li>2. Provide active means to prevent air borne dust from dispersing into atmosphere. 6 mil/fire resistant poly (plastic) barrier at entrance for short term work. Water mist work surfaces to control dust while cutting or use vacuum device.</li> <li>3. Place dust mat at entrances and exits of work sites. Seal unused doors with tape.</li> <li>4. Isolate HVAC and seal/cover air vents.</li> <li>5. Contain construction waste before transport in tightly covered containers using assigned exit route.</li> <li>6. Wipe surfaces with disinfectant. Wet mop and/or vacuum with HEPA filtered vacuum before leaving.</li> </ol>	
<b>CLASS III</b>	<ol style="list-style-type: none"> <li>1. Obtain and post infection control permit at work location before work begins.</li> <li>2. Follow all requirements listed for Class II in addition to requirements listed below.</li> <li>3. Isolate HVAC supply and return ductwork to prevent contamination of system.</li> <li>4. Complete all critical dust barriers ( hard wall) as well as the creation of an anti-room where required for inspection by ICRA Inspection Team (Safety Officer, IC Nurse, Project Engineer) before work begins.</li> <li>5. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Change filters</li> <li>6. Vacuum work area with HEPA filtered vacuums. Wet mop with disinfectant.</li> <li>7. Obtain ICRA Inspection Team approval before construction and prior to removal of any dust partitions</li> <li>8. Contain construction waste before transport in tightly closed containers using the assigned exit route.</li> </ol>	
<b>CLASS IV</b>	<ol style="list-style-type: none"> <li>1. Obtain and post infection control permit at work location before work begins</li> <li>2. Follow all requirements listed for Class II &amp; III in addition to requirements listed below</li> <li>3. Isolate HVAC supply and return ductwork to prevent contamination of system.</li> <li>4 Complete all critical dust barriers (hard wall barrier) as well as the creation of an anti-room where required. All personnel entering and leaving work site must be vacuumed using a HEPA filtered vacuum cleaner or wear cloth or paper coveralls and shoe covers that are removed each time they leave the work site.</li> <li>5. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. Change filters regularly. Seal holes, pipes, conduits and punctures appropriately.</li> <li>6. Wet mop with disinfectant. Vacuum work area with HEPA filtered vacuums.</li> <li>7. Contain construction waste before transport in tightly closed containers using the assigned exit route.</li> </ol>	
<b>Additional Requirements:</b>		
<b>Infection Prevention Coordinator:</b>		<b>Date:</b>
<b>Safety Officer:</b>		<b>Date:</b>
<b>FMS Project Engineer:</b>		<b>Date:</b>

**INFECTION PREVENTION CONSTRUCTION CHECKLIST**

**Location:** \_\_\_\_\_ **Date:** \_\_\_\_\_

**Project COTR:** \_\_\_\_\_

**Safety Representative:** \_\_\_\_\_

**Infection Prevention Coordinator:** \_\_\_\_\_

**Contractor Performing Work:** \_\_\_\_\_

<b>CONSTRUCTION ACTIVITY:</b>	<b>YES</b>	<b>NO</b>
<b>Type A: Inspection and non-invasive activities, minimal dust levels</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Type B: Small scale, short duration moderate dust levels</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Type C: Generates moderate to high levels of dust</b>	<input type="checkbox"/>	<input type="checkbox"/>
<b>Type D: Major duration and construction activities requiring consecutive work shift</b>	<input type="checkbox"/>	<input type="checkbox"/>

**INFECTION PREVENTION RISK GROUPS:**

**Low Risk:** \_\_\_\_\_

**Medium Risk:** \_\_\_\_\_

**High Risk:** \_\_\_\_\_

**Highest Risk:** \_\_\_\_\_

**Scope of work:** \_\_\_\_\_

Date: \_\_\_\_\_ Location: \_\_\_\_\_ Class of Precautions: \_\_\_\_\_

**BARRIERS:**

**YES**

**NO**

Construction signs posted for the area

- Construction site- DO NOT ENTER
- Emergency contact information
- Infection Control Instructions

Door properly closed and sealed

Floor mats/dust tacks mats at entrance and changed

Floor area clean, no dust tracked

Barrier intact

Door sweep

Door closure device

Door/tools locked when no one in area

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**AIR HANDLING**

All windows closed behind barrier

Negative air at barrier entrance

Negative air machine running

Hepa filter below 2 (above 2 filter change)

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**PROJECT AREA:**

Debris removed in covered container daily

Debris removed via designated exit route

Trash in appropriate container

Routine clearing done on job site

If chute used, it is not adjacent to open windows or HVAC air intakes

HVAC systems isolated, return ducts covered

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**TRAFFIC CONTROL:**

Restricted to construction workers and necessary staff only

All doors and exits free of debris

ID badges worn and visible by construction workers

<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>

**Comments:**

\_\_\_\_\_

**Signatures:**

**Project COTR:** \_\_\_\_\_

**Safety Representative:** \_\_\_\_\_

**Infection Prevention:** \_\_\_\_\_

## Infection Prevention – Construction Services

*The goal of the Infection Prevention Program is to identify and reduce the risks of acquiring and transmitting infections among patients, employees, and visitors.*



During construction, renovation and minor improvement projects, hidden infectious disease hazards may be released into the air, carried on dust particles or on clothing - for example, fungal organisms such as *Aspergillus*. *Aspergillus* species may be found in decaying leaves and compost, plaster and drywall, and settled dust. These organisms usually do not cause problems in healthy people, but a hospital is full of sick patients! *Aspergillus* and other fungal organisms can cause illness and even death in transplant patients, cancer treatment patients, and patients with lung problems or poor immunity. Therefore, it is critical that you do your part to keep our patients, employees, and visitors as safe and healthy as possible. We, in turn, will make conditions as safe as possible for you.

### 1. Medical Waste:

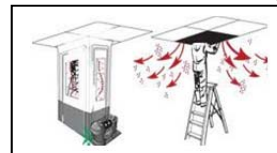
- We will remove any medical waste, including sharps containers (for used needles and syringes), from construction areas prior to the start of the projects.
- If you (contract workers) find any needles, syringes, sharp medical objects, please notify Infection Control IMMEDIATELY.

### 2. Barrier Walls:

- The construction areas MUST be kept separated from patient care areas by barriers that keep the dust and dirt inside the worksite.
- The walls must provide a complete seal of the construction area from adjacent areas.
- The barrier types must be constructed with the following materials/specifications and comply with National Fire Protection Association (NFPA) standards such as fire retardant polyethylene barrier (minimum 6-mil thickness.) for projects less than 72 hours, gypsum wall board, fire rated reinforced plastic fiberglass, masonite painted with fire resistant paint.
- Zip walls/door in polyethylene for entrances.

### 3. Environmental Control:

- Negative air pressure must be maintained within the construction area.
- Demolition debris is removed in tightly fitted covered carts - use specified traffic patterns.
- Exterior window seals are to be used to reduce the amount of outside excavation debris coming into the building.
- If demolition chutes are used, they must be sealed when not in use; the chute and damper should be sprayed with water, as necessary to maintain dust control.
- Control, collection and disposal must be provided for any drain liquid or sludge found when demolishing plumbing.
- Sticky or walk-off mats are placed immediately outside the construction zone and changed whenever necessary to control the spread of dust and dirt.
- Containment cubes keep air from dissipating into the halls.



### 4. Traffic Control

- Use designated entry and exit procedures.
- Keep all egress pathways free of debris.
- No unauthorized personnel should be allowed to enter construction areas.
- Use designated elevators only.

### 5. Cleaning

- Keep the construction area clean on a DAILY basis.
- Dust and dirt **must** be kept to a minimum. Use of HEPA vacuum should be used.



### 6. Workers

- Clothing must be free of loose soil and debris when exiting the construction area.
- Use personal protective equipment (masks, face shields, etc.) as indicated for the task at hand.
- Handwashing is the best method of reducing the transmission of infection: always wash your hands with soap and water after visiting the restroom, before eating, when leaving the construction site.

### 7. Accidents

- For needlesticks or other sharps accidents and body fluid exposures; wash skin with soap and water and flush eyes/nose/mouth with large amounts of water.
- Report the incident to your supervisor and report to the Safety and Health Manager for further treatment options.

**Questions? Please feel free to call Infection Prevention at ext. 7979.**