

**INFECTON CONTROL RISK ASSESSMENT (ICRA) MATRIX
 FOR CONSTRUCTION AND RENOVATION**

Step 1: Using the following table, *identify* the Type of Construction Project Activity (A-D)

Type A	Inspection and Non-Invasive Activities Includes, but is not limited to: <ul style="list-style-type: none"> • Removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet. • Painting (but not sanding) • Wall covering, 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.
Type B	Small scale, short duration activities which create minimal dust Includes, but is not limited to: <ul style="list-style-type: none"> • Installation of telephone and computer cabling • Access to chase spaces • Cutting of walls or ceiling where dust migration can be controlled • Minor duct work or minor electrical/cable work above ceilings • Sanding of walls for painting or wall covering where dust can be controlled
Type C	Work that generates a moderate level of dust or requires demolition or removal of any fixed building components or assemblies Includes, but is not limited to: <ul style="list-style-type: none"> • Major uncontrolled sanding of walls for painting or wall covering • Removal of floor coverings • New wall construction • Major duct work or major electrical/cable system work above ceilings
Type D	Major demolition and construction projects that generates high level of dust Includes, but is not limited to: <ul style="list-style-type: none"> • Activities which require consecutive work shifts • Requires heavy demolition or removal of a complete cabling system • New construction or complete renovation

Step 2: 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"> • Office areas • Non-patient care areas/rooms • Prosthetics • Building 3 • Building 4 Admin • Engineering shops • Laundry 	<ul style="list-style-type: none"> • Echocardiography • Primary Care • Mental Hygiene • Physical Therapy • Respiratory Therapy • Ultrasound • Radiology/Imaging • MRI/CT Scan • Endoscopy • Nuclear Medicine • All Outpatient Clinics • Dental • Women's Health 	<ul style="list-style-type: none"> • Urgent Care • Surgical Inpatient • Medical Inpatient • Psychiatry Inpatient • Clinical Labs • Ambulatory Surgery Prep • Pharmacy • Nutrition & Food Service (cafeteria) • VCS (cafeteria) • Radiology/ Special Procedure 	<ul style="list-style-type: none"> • Oncology Clinic • Operating rooms • Pharmacy Admixture • Anesthesia areas • SPD/Sterile processing • ICU/PACU • Negative Pressure Isolation rooms

Step 3: Match the Patient Risk Group (low, medium, high, highest) with the planned Construction Project Type (A, B, C, D) on the IC Matrix (below) to find the Class of Precautions (I, II, III, IV) or level of infection control activities required. Classes of precautions are described in the table on the following page.

IC Matrix: Class of Precautions for Construction Projects by Patient Risk

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

Step 4: Identify the areas surrounding the project area, assessing potential impact and indicate patient risk group (consider this when completing the ICRA).

Unit Below	Unit Above	Lateral	Lateral	Behind	Front
Canteen Area	2A	Outside	Storage	Outside	Corridor Bldg 44
Risk Group	Risk Group	Risk Group	Risk Group	Risk Group	Risk Group
High	High	Low	Low	Low	Low

Step 5. Assess the following as appropriate:

- Specific site of activity (e.g., patient room, medication room, etc.)
- Issues related to air handling and ventilation, plumbing, electrical in terms of occurrence of probable outages
- Consider potential risk of water damage or disruption
- Issues related to comprises in structural integrity (walls, ceiling, roof)
- Work hours: Can or will work be done during non-patient care hours?
- Disruption of traffic flow and re-routing of traffic flow
- Potential for closing patient areas during project or relocation of patients
- Impact of disrupting essential services to patients and employees
- Protection of the domestic water system to limit waterborne pathogens
- Protection of patients from construction hazards such as demolition, removal of debris
- Do project plans allow for:
 - Adequate number of isolation/negative air flow rooms
 - Required number and type of hand washing sinks
 - Separation of clean and dirty (clean and soiled utility rooms)

Description of Required Infection Control Precaution Guidelines by Class

Class I	<ol style="list-style-type: none"> 1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace a ceiling tile displaced for visual inspection. 	<ol style="list-style-type: none"> 1. Cleanup and disposal as appropriate. 2. Traffic: Decrease patients' exposures. 3. Water: Schedule interruptions during low activity.
Class II	<ol style="list-style-type: none"> 1. Provide active means to prevent airborne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place tacky mat at entrance and exit of work area. 	<ol style="list-style-type: none"> 1. Wipe work surfaces with disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with filtered vacuum before leaving work area
Class III	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system as required on a per project basis. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units as required on a per project basis. 4. Place dust mats at entrance and exit of work areas and replace with new mats daily or as necessary. 5. Contain construction waste before transport in tightly covered containers. 6. Cover transport receptacles or carts. Tape the covering unless solid lid. 	<ol style="list-style-type: none"> 1. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 2. Wet mop and/or vacuum work area with HEPA-filtered vacuums. 3. Depending on the project location and the ICRA, protective clothing should be worn and removed each time the worker leaves the work site to control dust throughout the medical center. Otherwise an anteroom must be constructed and clothing will be vacuumed using a HEPA-filtered vacuum before entering the "clean space".
Class IV	<ol style="list-style-type: none"> 1. Remove or isolate HVAC system in areas where work is being done to prevent contamination of duct system as required on a per project basis. 2. Take necessary actions to ensure HVAC system cannot cross contaminate other areas of the hospital. 3. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method before construction begins. 4. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units as required on a per project basis. 5. Seal holes, pipes, conduits, and punctures appropriately. 6. All personnel entering work site are required to wear appropriate protective clothing as required by the area. 7. Place tacky mats at entrance and exit of work areas and replace with new mats daily or as necessary. It is the contractor's responsibility to ensure contamination is kept at an absolute minimum outside the work area. 8. Provide appropriate clean up daily; wet mop with disinfectant as required. 9. Contain construction waste before transport in tightly covered containers. 10. Cover transport receptacles or carts. Tape covering unless solid lid. 	<ol style="list-style-type: none"> 1. Do not remove barriers from work area until completed project is inspected by the VA's IH/Safety Officer, Infection Control Coordinator, & Engineering Service and thoroughly cleaned by the VA's Environmental Management Service. 2. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction. 3. Wet mop area and/or vacuum work area with filtered vacuums. 4. Protective clothing should be worn and removed each time the worker leaves the work site to control dust throughout the medical center. Otherwise an anteroom must be constructed and clothing will be vacuumed using a HEPA-filtered vacuum before entering the "clean space".

Project Name: Lock Ward 1A Remodel (Pre-Construction ICRA)
 Project No: 564-14-145
 POC: Tom Bulger/Lee Warren

IC No: 140806CMS1
 End Date: 12/01/2014

Pre-Construction/Renovation Safety & Infection Control Risk Assessments & Safety Risk Assessment:

Guidelines	Y/N	Areas to Be Impacted	Control Activities Needed
<p>AIR QUALITY/VENTILATION Will there be any compromise to the quality of building air? (dust; HVAC system; air pressure; air evacuation) No cutting or drilling will be conducted. Dust should be minimal. Wall patch ~1.5 inch in diameter holes that will remain after pipe removed. Possible paint fumes when painting begins.</p>	<p>Y</p>	<p>Ward 1A: Replace floors in all patient rooms Remove old showers and sinks in all patient rooms and replace Patch and paint walls in patient rooms Remove and replace all exterior patient room windows Remove double entrance doors and replace with sing lock down doors x 2 Install 8 lockers in entrance anteroom Room 115 Exam Room: Install 36 inch corridor door and install interior viewing window, relocate Code Red button Install 2 new cameras and replace the 24 existing cameras Install video & audio system</p>	<p>Provide means to prevent air-borne dust from dispersing into adjacent areas. Water mist work surfaces to control dust for any cutting/drilling. Seal unused doors with masking tape. Block off and seal air vents. Wipe work surfaces with disinfectant. Cover debris transport carts tightly. Tacky mats at the entrance of the work zone. Clean /damp mop immediately any identified tracking of dust or debris outside the work zone. Low VOC paints The Contractors will only do one room at a time with a locked door leading into the room so no patients or staff will have access to the room under construction. Contractors will isolate the HVAC system in each room, will maintain negative air pressure within each room utilizing a HEPA air filtration unit.</p>
<p>UTILITY REQUIREMENTS Are there any anticipated utility disruptions? (planned outages; contingency plans) -Patient care areas? - Communication - Electrical</p>	<p>Y</p>	<p>Communication: Camera installation, Video & Audio System installation</p>	

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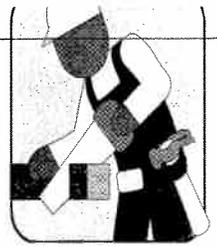
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Guidelines	Y/N	Areas to Be Impacted	Control Activities Needed
<ul style="list-style-type: none"> - Generator - Temperature - HVAC - Medical Gases - Natural Gas - Vacuum - Sewer / Sanitary - Water - Other 		<p>Water: Contractors will turn water off at each shower unit when replacing. Will not have any interruption to the rest of the water sources to Ward 1A</p>	<p>When Contractors are working in the common areas of Ward 1A, one person will be assigned to lookout for patient safety</p>
<p>NOISE Will there be any unusually loud or high-pitched noise levels? (amount; time of day; areas affected)</p>	Y	Ward 1A	<p>Contractors will be removing Terrazo materials in the showers in each patient room. This will cause a loud noise. Contractors will check with the Nursing Manager prior to start of the shower removal to find the best time to complete this work based on patient census.</p> <p>Contractors will wear protective clothing when removing the showers in each room and this protective clothing will be removed each time the worker leaves the work site.</p>
<p>VIBRATIONS Will vibration levels be excessive for hospital machinery to operate properly? (amount; time of day; areas affected)</p>	N		
<p>TRAFFIC CONTROL Movement of debris?</p>	Y		Debris will be removed in covered containers through Ward 1A and out front entrance Bldg. 1
Signage needed?	N		
Entrances and exits for workers?	N		
Patients need to be moved?	Y	Contractors will remodel one room at a time and will have room completely done and ready for patient occupancy prior to starting another room.	
Egress paths?	N		
Patient, visitor, employee traffic areas?	N		
<p>EMERGENCY PROCEDURES Does the construction present any conflicts with the emergency disaster</p>	N		

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management program?			
-Patient care areas?	N		
-Non-Patient care area?	N		
-Public access areas?	N		
Hot work permits?	Y	Welding will be done on Shower	
Sprinkler systems?	Y	Install Sprinkler system in immediate area of remodel (room) will be covered during construction	
Fire drills?	N		



Infection Control Orientation - Construction Service Workers

The goal of the Infection Control Program is to identify and reduce the risks of acquiring and transmitting infections among patients, employees, physicians and other licensed independent practitioners, contract service workers, volunteers, students 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 premature babies, 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:

- a. We will remove any medical waste, including sharps containers (for used needles and syringes), from construction areas prior to the start of the projects.
- b. If you (contract workers) find any needles, syringes, sharp medical objects, please notify your job superintendent or foreman immediately.

2. Barrier Walls:

- a. The construction areas **MUST** be kept separated from patient care areas by barriers that keep the dust and dirt inside the worksite.
- b. The walls must provide a complete seal of the construction area from adjacent areas (walls may be rigid or 4-6 mil thickness plastic as appropriate for the project).

3. Environmental Control:

- a. Negative air pressure must be maintained within the construction area.
- b. Demolition debris is removed in tightly fitted covered carts - use specified traffic patterns.
- c. Sticky or walk-off mats are placed immediately outside the construction zone and changed whenever necessary to control the spread of dust and dirt. It is the contractor's responsibility to ensure contamination is kept to an absolute minimum outside the work area.
- d. Exterior window seals are to be used to reduce the amount of outside excavation debris coming into the building.
- e. 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.

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f. Control, collection and disposal must be provided for any drain liquid or sludge found when demolishing plumbing.

g. Any water leakage or disruption of water system should be reported immediately to the project coordinator.

4. **Traffic Control:**

a. Use designated entry and exit procedures.

b. Keep all egress pathways free of debris.

c. No unauthorized personnel should be allowed to enter construction areas.

d. Use designated elevators only.

e. Post appropriate signage to direct traffic flow and restrict unauthorized entrances.

5. **Cleaning:**

a. Keep the construction area clean on a DAILY basis.

b. Dust and dirt **must** be kept to a minimum.

6. **Workers:**

a. Clothing must be free of loose soil and debris when exiting the construction area.

b. Use personal protective equipment (masks, face shields, etc.) as indicated for the task at hand. Avoid entering rooms with Isolation Precaution signage but if entry is necessary comply with all the Isolation Precaution requirements, including proper hand hygiene and donning appropriate personal protective equipment (PPE).

c. 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.

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**DEPARTMENT OF VETERANS AFFAIRS MEDICAL CENTER
 Fayetteville, Arkansas**

Infection Control Pre - Construction Review of ICRA and Requirements

Date of review	August 6, 2014
Project no.	564-14-145
Project name	Lock Ward 1A Remodel

	YES	NO	N/A
Infection Control (Pre-Construction ICRA)			
1. ICRA and Infection Control Orientation handout reviewed and questions addressed or answered.	Y with Tom Bulger		
2. Location of and erection methods for interim dust barriers reviewed and evaluated.	Y with Tom Bulger		
3. Requirement for dust barriers assessed to prevent airborne particulate escape.	Y with Tom Bulger		
4. Requirement for negative airflow ventilation and filtration reviewed and evaluated.	Y with Tom Bulger		
5. HEPA vacuum and equipment requirements reviewed and evaluated.	Y with Tom Bulger		
6. Debris removal and control requirements reviewed and evaluated.	Y with Tom Bulger		
7. Circulation and traffic control patterns reviewed and evaluated.	Y with Tom Bulger		
8. Limitations/restrictions for outdoor construction/demolition activities reviewed and evaluated.			NA
9. This project has the possibility of exposing the Construction Workers to Tuberculosis (TB) due to the construction site location, patient population, or hospital layout.			NA
10. Clothing requirements reviewed and evaluated.	Y with Tom Bulger		

Construction Project Type:
Class of Precautions:

Patient Risk Group:
ICRA Completed:

Assessment Performed by:	
IH/Safety Officer	
Project Engineer	
Infection Control Practitioner	//ES Catherine M. Steele, MSN, RN

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Reviewed by:	
Contracting Officer (VA)	
Architect/Contractor	