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Infection Control Risk Assessment of Construction/Renovation/Demolition and Environmental Control of Invasive Fungal Infections Plan

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INFECTION CONTROL RISK ASSESSMENT

PURPOSE

To minimize the risk of patients acquiring healthcare associated infections (HAIs) that may result when fungi or bacteria are dispersed into the air via dust or water aerosolization during construction, renovation, or maintenance activities in or near the UVA Health University Medical Center.

This plan outlines UVA Health University Medical Center's program for prevention of HAIs associated with construction, renovation and maintenance activities, primarily through dust mitigation. This plan defines "construction, renovation, and maintenance activities" as Work. All parties involved in these activities are responsible for the integration of the infection prevention and control principles in this plan throughout the planning, managing, and completion of the Work. This process is identified as the Infection Control Risk Assessment (ICRA).

An ICRA must be completed for all Work in any facility that potentially impacts patient care activities including work vertically or horizontally adjacent to patient care areas. Refer to Table B: Risk Groups for a comprehensive list of patient care areas.

This ICRA Plan is a collaboration between Facilities Management (FM), Hospital Epidemiology/Infection Prevention and Control (IPC) Environmental Services, and Area Managers. FM and IPC will continuously assess, revise, monitor, and verify compliance with the ICRA.

GENERAL DEFINITIONS

Area Manager: Person in charge of the area or patient care unit in which the work/project is being performed. The term Unit Manager may also be used interchangeably. An Area or Unit Manager may also choose a designee to act on his or her behalf.

Construction and Renovation: Construction and Renovation: Any work project that creates a moderate to high level of dust, will require **at least** Class 3 precautions, regardless of patient risk group. Work projects that do not fall under this definition may still require Class 3 or higher precautions based on patient risk group and scope of work.

Construction Cleaning: Contractor cleaning required for all work, focusing on removal of dust that results from construction including, but not limited to: wiping of hard surfaces (including ICRA barrier), cleaning air vents and replacing filters, wiping all fixtures, and cleaning windows and floors. Construction clean must be completed **prior** to the removal of the construction barrier and re-initiation of the HVAC system.

Contractor: For the purposes of this plan "Contractor" is defined as any entity performing **Work**, including but not limited to Facilities Management personnel, Medical Center equipment technicians, consultants performing surveys and/or inspections, the General Contractor, Construction Manager, Prime Contractor, Sub Contractor, Vendors, Tradesmen, Mechanics, Apprentices, Laborers, Original Equipment Manufacturer or Technician.

Emergency Work: Any unplanned event that can cause harm to patients, Team Members, or visitors.

Environmental Hazard: Any condition that could affect human health, such as sewage, mold, asbestos, flooding, significant water intrusion, gray and black water will require Class 4 precautions for LOW and MEDIUM risk groups, and Class 5 precautions for high and highest risk groups.

Environmental Services (EVS): A company contracted by the Medical Center or the Academic division to provide housekeeping services, including Terminal Cleaning of patient care areas following completion of Work. EVS may be scheduled by the Contractor or Responsible Person.

Facilities Management (FM): The Facilities Management Department at UVA. This includes the Health System Physical Plant (HSPP), Capital Construction & Renovation Health Systems (CC&R), Facilities Planning and Capital Development (FP&CD), and Construction and Renovation Services (C&RS).

HEPA Vacuum: HEPA (High-Efficiency Particulate Air) vacuums differ from conventional vacuums in that they contain filters that are capable of trapping extremely small, micron-sized particles. A true HEPA filter can trap 99.97 percent of all airborne particles larger than 0.3 microns.

Infection Control Risk Assessment (ICRA): The process of determining the potential risk of transmission of various air and waterborne biological contaminants in the facility during Work. This will be a multidisciplinary, collaborative process that evaluates Work Activity Types and Risk Groups to determine a Class Level and Interventions.

ICRA Authorization (Authorization): The agreed upon results of ICRA which are documented on the ICRA Authorization Form. Refer to Appendix A. Also referred to as the Authorization.

ICRA Team: Representatives from Hospital Epidemiology/Infection Prevention and Control and FM charged with oversight of the ICRA process.

Imminent Risk: Any condition or activity which creates a hazard that could reasonably be expected to cause injury or serious infection (leading to death or serious physical harm) before it can be eliminated through normal notification procedures.

Hospital Epidemiology/Infection Prevention and Control (HE/IPC): Office of Hospital Epidemiology and Infection Prevention and Control.

Maintenance Technician: Is the individual responsible for operation and maintenance of any installed system that has completed the mandatory training as described in the Training/Education section V.

Mandatory Training: The minimum level of training, as required by this plan, to qualify a person for a specific role in the ICRA process. The level and type of training required will correlate to level of responsibility assigned to the role by this plan. (See Training/Education – Section V)

Patient Occupancy: The point at which the following may be brought in and the space may be utilized for its intended purpose: Team Members and items used for patient care (e.g., patient supplies, moveable patient equipment and furniture).

Project Team: Responsible Persons from each entity performing Work, FM Project Coordinator, EVS**.**

Responsible Person (RP): UVA Team Member charged with oversight of the work/project and accountable for compliance with procedures in this plan. RP includes UVA Project Managers, Supervisors, or Construction Administration Managers (CAM). To qualify as a Responsible Person, the employee must have completed the associated mandatory training as described in (Training/Education – Section V) prior to the commencement of the work.

Restricted Area: Areas governed by AORN, AAMI or Pharmacy guidelines, including but not limited to: Operating Rooms, Cardiac Catheterization Lab, Electrophysiology Lab, Interventional Radiology, Neuroradiology, Sterile Processing (Clean side) Decontamination, and Pharmacy compounding.

Staff occupancy: Occupancy granted at substantial completion after Terminal Clean is performed. Any work performed during this period will require an additional cleaning consistent with the level of work performed.

Surgical Attire: Personal Protective Equipment (PPE) including but not limited to: scrubs/coveralls, hair covering, and shoe coverings to be worn in all **Restricted Areas** in accordance with *IPC: Surgical and Procedural Attire in Restricted and Semi-Restricted Areas*. PPE may be provided by the Contractor, or UVA-issued.

TCUO: Temporary Certificate of Occupancy issued by University Building Official (UBO).
Team Member: Persons providing patient care or other services, receiving training, or participating in health care education and research within, or for the benefit of, the Medical Center, regardless of employer. May also be referred to as "Covered Persons" in Medical Center policies and procedures.

Terminal Clean: A clean scheduled by the RP with Environmental Services (EVS) after construction is complete, that includes cleaning of all surfaces of the work site to eliminate dust, and make the room safe for patient re-occupancy. See Demobilization and (Re) Occupancy for instructions on scheduling.

Water Column (WC): Inches of water column ("WC) is a unit used to measure gas pressure, particularly in applications like heating, ventilation, and air conditioning. It represents the pressure exerted by a column of water that is one inch high. Work sites requiring negative pressure should be maintained between (-0.1 to -0.5 WC).

Work: Any construction, maintenance, renovation, or inspection related activity defined in Table 1 that has the potential to impact patient care environment, including work vertically or horizontally adjacent to patient care or patient assembly areas, and outdoors. See Table A, Work Activity Type

PRODUCTS AND MATERIALS

A. Construction Barriers and Doors - Examples of and/or components of barriers that may be utilized per **ICRA Authorization** Form:
   1. Existing doors and walls may be acceptable as the ICRA barrier as long as negative pressure is achieved for level III.
      i. Work Level IV work may require an anteroom per Infection Prevention.
      ii. Level V work requires an anteroom.

   2. Polyethylene Containment Wall System (e.g., Zipwall®, Quick-wall or equivalent) – Floor length fire retardant (FR) polyethylene /plastic that is clamped to the ceiling grid with overlapping sheets for access may be used for Type B work. For Type C work, a FR polyethylene barrier with zipper access, tightly sealed to adjacent surfaces (e.g., zip wall with appropriate poles/clamps). These temporary Barrier systems will be permitted only when discussed with and approved by the **ICRA Team**. Constraints associated with this system (e.g., duration of use) will be noted on the **ICRA Authorization** form.

   3. Mobile Dust Containment Units/Containment Booth – A mobile booth mounted on caster wheels and enclosed on all sides with an open top that can be extended to create a seal against an existing ceiling in the area of work. Booths are typically equipped with a built-in ladder. Approved booths will also be equipped with an air scrubber which may be built-in or portable, provided that the power cord for the scrubber does not prevent proper seal at all booth openings. Must be sized to accommodate all tools necessary to safely complete the work. Annual evaluation is required to document the integrity of the unit and HEPA filter efficiency.

   4. Drywall barriers – A constructed gypsum board wall with joints and screws covered and/or sealed on at least one side. Wall construction may consist of one-sided drywall unless otherwise required to meet fire ratings. A Poly Containment Wall System should be used to create a containment during the construction of a drywall barrier and extend to the full height of the deck. Barriers must be wipeable/cleanable.
      i. Doors in drywall barriers constructed for ICRA containment will include automatic closers and be installed with positive latching.

   5. Modular Barrier Walls (e.g. –EDGE-Guard or equivalent) – Interlocking modular wall and door panels and other modules which are quickly and cleanly installed, relocated, or dismantled. Integrated features help manage difficult sealing problems and provide flexibility for most isolation situations. This also includes prefabricated containment devices approved by the ICRA Team.

6. Cabling Access Point (CAP) - Ceiling panel with opening protected by bristles **ONLY** for use in pulling cable into the above ceiling space (as approved by the ICRA Team).

7. Anteroom - Temporary room immediately adjacent to the work zone entrance which provides a transition point for people entering or exiting the work area. Required in all Level V work authorizations and may be required in Level IV. Anteroom should be sized to accommodate the vast majority of materials, equipment, HEPA vacuum and entering or exiting the site without opening the door into the work site and the door to the outside of the site at the same time.

8. Any of the barrier types indicated above may be required in order to contain the ceiling envelope, chases, interstitial spaces, etc., using approved non-combustible materials including polycarbonate panels and fire-retardant insulated duct board, as determined during the ICRA process.

B. Dust Control Mats - Used inside of containment at all construction entrances/exits to keep dust, dirt, and other particulates from spreading due to foot traffic (NOT as an alternative to adequate dust mitigation). Mats should be secured appropriately and changed when no longer adhesive.

C. Duct Wrap Film (DWF) - A polyethylene film with a high-tack adhesive designed to be applied over the openings of ductwork during transportation and storage to protect the inside from moisture, dust, debris, paint, and other particles that can lead to poor indoor air quality. Open ends of all ductwork stored and/or installed in the area of work will be covered with DWF. DWF may also be used to protect existing or installed grills, registers and diffusers (GRD's) where air flow has been disconnected but the GRD is to be left in the area of work.

D. HEPA Vacuum – True HEPA filtered vacuum certified at least annually for recovery of lead, dust, paint chips and other hazardous materials. Used for cleaning personnel, tools, and materials prior to exiting the work area.

E. Portable Air Scrubbers - HEPA filter equipped (non-ducted) air circulation machines that provide roughing filters (stage 1 pre-filter), primary filters (stage 2 pre-filters), and will clearly indicate airflow capacity, to permit the RP to easily calculate and record the Air Change Rate for the work area. A minimum 6 air exchanges per hour are required (for recirculating option only). Safety features will include thermal overload protection, auto reset and UL compliance rating. HEPA filters will be a minimum of 99.97% efficient and charcoal filter may be used to decrease odors. Annual inspection of scrubbers is required.

F. Room Pressure Monitor – An installed device used to monitor the pressure inside the containment in reference to the outside area. Examples include, airflow direction indicators (such as manometers) and automated devices capable of measuring and recording differential pressure. Automated systems may provide options for logging, alarming, and notification.

G. Sweeping Compound – Oil or Wax based product sprinkled on flooring surface prior to sweeping to minimize dust particles becoming airborne during sweeping. Sweeping compounds commonly use sawdust or cellulose as the main bulk materials with either oil or wax added for dust adhesion. Only nonpetroleum-base sweeping compounds are permitted for use in patient care areas. Care should be taken to ensure that oil-based products do not create a slippery surface.

PROCEDURE

The following procedure is designed to assist all parties involved in or impacted by work to evaluate the potential risks associated with the activities, and address necessary precautions.

I. INFECTION CONTROL RISK ASSESSMENT (ICRA) DEVELOPMENT AND AUTHORIZATION

1. The **Responsible Person** will complete the **ICRA Authorization** once project scope has been fully identified If possible, the Contractor(s)/person(s) that will be performing the work should be included in the **ICRA Authorization** review and approval process.

2. A file copy of authorizations for Classes III, IV, and V will be maintained in Infection Prevention and Control; Responsible Persons should maintain a copy with the project file that is posted onsite at the front entrance to construction site.

3. Review the Infection Control Risk Assessment Guideline below:
    a. Identify the Work Activity type (Types A-D) using Table A. Activity types are defined by the scale, scope, duration, and production of dust or water. Contact FM or HE/IPC if any activity is questionable under these guidelines.
    b. Identify the risk groups (Low, Medium, High or Highest Risk) that will be affected using Table B. If more than one risk group will be affected, select the higher risk group. **For all work activity classes, patients must be removed from the Work area while the work is being performed.**

4. Complete the Infection Control Risk Assessment Authorization form in Appendix I.

5. Obtain appropriate approvals for the ICRA Authorization form, which is required for all Work. This includes all applicable reviews, approvals, and signatures by the person responsible for the work.
    a. All Class I-II must be reviewed and authorized by the Responsible Person and the manager of the area and may proceed without prior approval from the ICRA Team.
    b. Class III-V Work requires the review and approval of the ICRA Team prior to the commencement of the project.
    c. The Responsible Person will send a request by email to the Director of Infection Prevention & Control.

6. In the event of an emergency (any unplanned event that can cause harm to patients and/or Team Members) an ICRA Authorization will be emailed to CLInfectionPreventionistGroup@uvahealth.org and reviewed per this document as soon as possible after initial mitigation efforts.

7. Phased work or work outside of the area of construction as identified or covered in the project ICRA Authorization should have an ICRA Authorization for the overall project as well as separate ICRA Authorizations for each phase/work area of the project.
    i. A signed copy of the ICRA Authorization form will be displayed at the job site or work area (including mobile dust containment units) prior to beginning work and will be displayed for the duration of the project.
    ii. If the Contractor(s) performing the work covered by the ICRA Authorization were not identified prior to the Authorization approval, it is the responsibility of the Responsible Person to review the requirements of the Authorization with the person(s) performing the work. If, during this review, alternative work methods and/or compliance paths are identified, the Authorization will be revised.
    iii. The Responsible Person initiating the ICRA authorization will notify the ICRA Team of the actual project start date prior to the commencement of the work.

INFECTION CONTROL RISK ASSESSMENT FOR CONSTRUCTION/RENOVATION/DEMOLITION AND ENVIRONMENTAL CONTROL OF INVASIVE FUNGAL INFECTIONS PLAN

*Table A – Work Activity Types: Select Type of Activity

Type A	**Inspection and non-invasive activities.** These include, but are not limited to: ☐ Removal of ceiling tile for visual inspection-limited to 1 tile per 50 square feet with limited exposure time. ☐ 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. ☐ Clean plumbing activity limited in nature.
Type B	**Small scale, short duration activities (work completed in single shift) that create minimal dust.** These include, but are not limited to: ☐ 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). ☐ Fan shutdown/startup. ☐ Installation of electrical devices or new flooring that produces minimal dust and debris. ☐ The removal of drywall where minimal dust and debris is created. ☐ Controlled sanding activities (e.g., wet or dry sanding) that produce minimal dust and debris.
Type C	**Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies (e.g., counter tops, cupboards, sinks).** These include, but are not limited to: ☐ Removal of preexisting floor covering, walls, casework, or other building components. * ☐ New drywall placement. * ☐ Renovation work in a single room. * ☐ Non-existing cable pathway or invasive electrical work above ceilings. ☐ The removal of drywall where a moderate amount of dust and debris is created.* ☐ Dry sanding where a moderate amount of dust and debris is created. * ☐ Work creating significant vibration and/or noise. ☐ Any activity that cannot be completed in a single work shift.
Type D	**Major demolition, construction, and renovation projects**. These include, but are not limited to: ☐ Removal or replacement of building system component(s). ☐ Removal/installation of drywall partitions. * ☐ Invasive large-scale new building construction. * ☐ Renovation work in two or more rooms. *

Note: *Items that are typically associated with high levels of dust generation. This is not a comprehensive list; each project should be evaluated individually

*Table B – Risk Groups: Select the Determined Risk

Low Risk Non-patient care areas such as:	Medium Risk Patient care support areas such as:	High Risk Patient care areas such as:	Highest Risk Procedural, invasive, sterile support and highly compromised patient care areas such as:
☐ Public hallways and gathering areas not on clinical units. ☐ Office areas not on clinical units. ☐ Break rooms not on clinical units. ☐ Bathrooms or locker rooms not on clinical units. ☐ Mechanical rooms not on clinical units. ☐ EVS closets not on clinical units.	☐ Waiting areas. ☐ Clinical Engineering. ☐ Materials management. ☐ Sterile processing department - dirty side. ☐ Kitchen, cafeteria, gift shop, coffee shop, and food kiosks.	☐ All acute care units and patient care areas (including outpatient). ☐ Emergency department. ☐ Occupational health clinics. ☐ Pharmacy - general work zone. ☐ Medication rooms and clean utility rooms. ☐ Imaging suites: diagnostic imaging. ☐ Clinical laboratory. ☐ Linen Room.	☐ All transplant and intensive care units. All oncology units. ☐ OR theaters and restricted areas. ☐ Procedural suites. ☐ Pharmacy compounding. ☐ Sterile processing department - clean side. ☐ Transfusion services. ☐ Dialysis ☐ Imaging suites: invasive imaging.

Note: *Designation of grouping for any location may be changed at the discretion of HE/IP&C | * Environmental conditions that could affect human health, such as sewage, mold, asbestos, gray and black water will require Class of Precautions IV for LOW and MEDIUM Risk Groups and Class of Precautions V for HIGH and HIGHEST Risk Groups.

*Table C – ICRA Classification: Select Class due to Type and Risk

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

Matrix of Precautions for Construction, Renovation and Operations

Table D – Infection Control Interventions | Before and During Work Activity

Class of Precautions	Mitigation Activities (Performed Before and During Work Activity)	
Class I ***Does Not Need IP&C Approval***	1. Perform noninvasive work activity as to not block or interrupt patient care. 2. Perform noninvasive work activities in areas that are not directly occupied with patients. 3. Perform noninvasive work activity in a manner that does not create dust.	4. Immediately replace any displaced ceiling tile before leaving the area and/or at end of noninvasive work activity. 5. Contractor is educated before the start of the project about the importance of adhering to Infection Prevention & Control measures. 6. HEPA vacuum and wipes should be kept on work site for just in case events of dust being found to clean the work area upon completion of task.
Class II ***Does Not Need IP&C Approval***	1. Perform only limited dust work and/or activities designed for basic facilities and engineering work. 2. Perform limited dust and invasive work following standard procedures approved by the organization.	3. Provide active means to prevent air-borne dust from dispersing. 4. This Class of Precautions must never be used for construction or renovation activities.
Class III ***Requires IP&C Approval***	1. Provide active means to prevent airborne dust dispersion into the occupied areas. 2. Means for controlling minimal dust dispersion may include hand-held HEPA vacuum devices, appropriate and approved temporary ICRA barrier (polyethylene plastic containment, Edge Guard, etc.), or isolation of work area by closing room door. 3. Remove or isolate return air diffusers to avoid dust from entering the HVAC system. 4. Remove, isolate, or damp down the supply air diffusers to avoid positive pressurization of the space. 5. If work area is contained, then it must be neutrally to negatively pressurized at all times.	6. Apply the approved containment tape to seal gaps between barriers, ceiling and floor. 7. Install a dust control mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly no longer adhesive. 8. Maintain clean surroundings when area is not contained by way of damp mopping or HEPA vacuuming surfaces. 9. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area. 10. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU). 11. For adjacent outdoor work, many of the above interventions may not apply. However, additional interventions may be required to isolate work from building entrances and mitigate work impact to patient care (e.g., re-route of patient traffic, wet down excavation areas, charcoal filters on air intakes, additional physical barriers at entrance/windows).
Class IV ***Requires IP&C Approval***	1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers extending to the ceiling or if ceiling tile is removed, to the deck above All penetrations through the barrier shall meet the appropriate fire rating requirements. 2. Refer to Products and Materials, Section A 1-7 for approved barriers that must be constructed in a manner that prevents dust release. 3. Seal all penetrations in containment barriers, including floors and ceiling, using approved materials (i.e., approved containment tape, UL schedule firestop if applicable for barrier type). 4. Containment units or mobile containment units (MCUs) approved for Class IV precautions in small areas, when work is totally contained by the unit and utilizes HEPA-filtered exhaust air. 5. Install an adhesive (dust collection) "walk-off" mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly soiled. 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 work area. The airflow must cascade from outside to inside the work area. The entire work area must remain negatively pressurized. 9. Maintenance of negative air pressurization (range: -0.01 to -0.05. wc) of the entire workspace through use of 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. Air pressure to be monitored and documented daily.	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 (e.g., 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 (range: -0.01 to -0.05. wc). 13. Contain all trash and debris in the work area. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained 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. HEPA vacuuming of clothing or use of cover suits is acceptable. 16. Workers must wear shoe covers prior to entry into the work area. Shoe covers must be changed prior to exiting into the occupied space (non-work area). Damaged shoe covers must be immediately changed. 17. Install an adhesive (dust collection) "walk off" mat at entrance of contained work area based on facility policy. Adhesive mats must be changed routinely and when visibly soiled. 18. Collect particulate data during work to monitor and ensure that contaminates do not enter the occupied spaces. Routine collection of particulate samples will be used to verify HEPA filtration efficiencies. 19. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU).

Class V ***Requires IP&C Approval***	1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers extending to the ceiling or, if ceiling tile is removed, to the deck above. All penetrations through the barrier shall meet the appropriate fire rating requirements. 2. Refer to Products and Materials, Section A 1-7 for approved barriers that must be constructed in a manner that prevents dust release. 3. All containment units or mobile containment units (MCUs) must be built in a manner that prevents dust dispersion. Barriers must be affixed to ground and ceiling in a manner that is secure from movement or damage. Apply approved containment tape to seal gaps between barriers, ceiling or floor. 4. Containment units or mobile containment units (MCUs) approved for Class IV precautions require HEPA-filtered exhaust air. 5. Utilize anteroom and require all personnel to pass through this room so that they can be vacuumed using a HEPA vacuum cleaner before cleaning the worksite. In certain situations, wearing coveralls and/or shoe covers upon leaving the worksite may also be required. 6. Install an adhesive (dust collection) "walk-off" mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly soiled. 7. Remove or isolate return air diffusers to avoid dust entering the HVAC system. 8. Remove or isolate the supply air diffusers to avoid positive pressurization of the space. 9. Negative airflow pattern must be maintained from the entry point of the anteroom into the work area. The airflow must cascade from outside to inside the work area. The entire work area must remain negatively pressurized. Continuous air pressure monitoring (range: -0.01 to -0.05 wc) and daily particle count monitoring outside of work entrance is required. 10. Maintenance of negative pressurization of the entire workspace by use of HEPA exhaust air systems directed outdoors.	11. Exhaust discharged directly to the outdoors that is 25 feet or greater from entrances, air intakes and windows does not require HEPA-filtered air. 12. 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. 13. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (bathroom exhaust) is **not acceptable.** 14. 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. 15. Contain all trash and debris in the work area. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area. 16. Personnel will be required to wear disposable bunny suit while entering a restricted area going to the work site. Remove and dispose the bunny suit in anteroom before entering work site. Clean disposable bunny suit must be donned before leaving the anteroom. 17. 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. 18. 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. 19. Collect particulate data during work to monitor and ensure that contaminates do not enter the occupied spaces. Routine collection of particulate samples will be used to verify HEPA filtration efficiencies. 20. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU).

I. If the work takes place within a **Restricted Area**, the **Contractor** must adhere to the Supplemental Infection Control Interventions (Appendix B). The Supplemental Infection Control Interventions may be applied to other highest risk areas (i.e., Sterile Processing, Bone Marrow Transplant, ICUs) as determined necessary by the Primary **ICRA Team**.

II. A more detailed description of the interventions applying to a specific work activity will be provided in the 'Additional Comments or Requirements' section.

MOBILIZATION/REMOBILIZATION

Following is the typical sequence for the implementation of the Infection Control Interventions at the beginning of a project or any time a new pre-approved ICRA intervention is implemented:

A. Maintenance Technicians will complete Pre-Dust-Generating Activity Checklist (Appendix D) or the Mobile Dust Containment Unit Checklist (Appendix C) and post at the **Work** site or in the Mobile Dust Containment Unit prior to initiation of dust-generating activity. Maintenance Technicians must maintain a copy of all completed checklists.

B. The Responsible Person and **Area Manager** will arrange for the relocation of supplies, equipment, furniture, etc. from the work zone before the containment barriers are installed. Anything that cannot be relocated must be tightly covered with plastic or other impervious material that is cleanable or disposable.

C. Ensure that all exterior windows and building penetrations of worksite are sealed. All sewer lines must be capped with gasketed caps.

D. The **ICRA Authorization** will indicate if a temporary fire-retardant barrier is to be erected prior to the construction of the ICRA barrier. Use of temporary plastic barriers should be limited to a single work shift. Exceptions for extraordinary circumstances must be approved by the ICRA Team.

E. The **Contractor** will install the ICRA barrier using approved materials and following the requirements of the ICRA Authorization Form.

F. The anteroom, if present, will be constructed to maintain airflow from the clean side through the anteroom and into the work zone.

G. The ICRA Authorization Form will indicate if a negative pressure monitoring device is required. If required, The **Contractor** will arrange for its installation. Upon completion of the barrier, the Contactor will verify acceptable negative pressure.

H. The Responsible Person will coordinate with **Contractor**(s) or person(s) performing the Work to provide the manpower and equipment (including portable air scrubbers, ICRA barrier materials, etc.) for meeting the design and intent of the ICRA requirements. Equipment will be maintained per the manufacturer's instructions for use (IFU) including the replacement of the HEPA and other filters. Documentation of this maintenance must be readily available.

GENERAL MAINTENANCE AND OVERSIGHT OF INTERVENTIONS

The steps described in this section are required for general maintenance and oversight of the ICRA Authorization/Interventions.

A. Barrier Management:
   1. The Responsible Person and/or **Contractor** will ensure the barriers are maintained for the duration of the project to prevent dust and debris from escaping the work zone.
   2. Regular inspections of the barrier are performed during the course of the work shift; inspections will include, but will not be limited to:
      a. Doors are operating correctly, i.e., self-closing and latching
      b. All seams, joints and penetrations are sealed (pipe, conduit, cable, etc.)
      c. Temporary firestop systems are installed/maintained
   3. A record of these inspections will be included in the Daily Monitoring Log (Appendix A).
   4. All entrances to the work site should remain locked when no active work is occurring and space is vacant.

B. Negative Pressure/HEPA filtration:
   1. The required HEPA filtration and/or negative air must be maintained continuously until completion of all dust generation activities and pre-barrier removal cleaning. For recirculating options ONLY, the number of portable air scrubbers required for a Work Area should be calculated based on providing at least six air changes per hour (ACH).

C. When negative air pressure is required per the ICRA authorization, the pressure inside the site must be maintained negative to the surrounding spaces or areas. The **UVA Project Manager/CAM/HSPP/Contractor** will confirm negative pressure at all non-sealed openings into the Work site using appropriate means as described in Table D, and will document negative pressure on the ICRA log. The priority of exhaust is as follows:
   1. Exhaust HEPA filtered air to outside of building
   2. Utilize MERV 8 filtered dedicated exhaust system, if available
   3. Utilize MERV 8 filtered single pass return system (only available in ORs and OR corridors)
   4. Exhaust HEPA filtered air into appropriate adjacent space. **This option may not be permitted in Restricted Areas**
   5. Utilize MERV 8 filtered return grills and recirculating air scrubbers (minimum 6 ACH)
   6. When the above conditions cannot be attained further risk assessment will need to be performed.

After demolition is complete, it may be preferable to reduce HEPA filtered air that is being exhausted out of the building and redirect it to appropriate adjacent spaces in order to minimize makeup air coming from outside of the building.

D. Isolation of HVAC Systems:
   1. HVAC supply and return systems must be isolated, if possible, and grills within the construction area must be sealed unless alternate measures are specifically approved by the ICRA Team. The method for sealing must be dust tight, must withstand the static air pressure, and be appropriate for the wall/floor rating. Consideration should be given to impact on adjacent spaces when HVAC systems are isolated.
      i. If supply must remain active for space cooling, supply should be dampened down enough to maintain a minimum negative air pressure (-.01 wc) in the space.
      ii. Active return air ducts that extend through the work site and serve other locations may be wrapped in plastic sheeting to prevent any leaks into the duct from the work site.
      iii. Use of existing exhaust systems with additional measures to prevent contamination of the system may be approved by the ICRA Team.
   2. Use of dampers to isolate HVAC systems may be used but may not preclude the use of additional measures to ensure a proper seal.
   3. Cover open ductwork/equipment/Variable Air Volume (VAV) boxes, etc. during storage and installation.
   4. If/when the work needed is tying in a new piece of return duct into an active, existing return duct, please consult with ICRA Team

E. General Dust Mitigation:

   1. The **Responsible Person** and/or **Contractor**(s) shall provide appropriate manpower/equipment to facilitate ongoing and timely cleaning in the work zone, anteroom, and adjacent areas to prevent the accumulation of dust and debris.
   2. **Contractor**(s) shall use appropriate measures to maintain a clean work site to prevent the migration of dust and debris outside of the work zone. Measures may include sweeping/mopping, vacuuming, increasing the number of negative pressure machines and/or filtration. When sweeping, use of a sweeping compound may be indicated in order to prevent dust from becoming airborne. Any dust/debris tracked outside of the work zone shall be cleaned-up immediately with damp mop or HEPA Vacuum. All vacuuming in the anteroom or in areas adjacent to the work site shall be done using a HEPA Vacuum.
   3. Anterooms, when present, shall be kept in a clean and tidy manner. Cleaning products and materials (bleach wipes, HEPA vac, mops, etc.) will be kept in the anteroom to facilitate the cleaning of personnel, equipment and materials exiting the site.

4. Debris removed from the work zone shall be in cleanable containers with tightly fitting hard covers. Transport receptacles, carts, toolboxes, equipment, etc. are to be free of dust/debris before exiting the site. Containers shall be transported following the designated route as identified in the ICRA Authorization.
5. **Contractors** are required to be free of dust prior to exiting the work zone. Coveralls, if worn, are to be removed in the work zone just before entering the anteroom. Vacuuming of clothing must occur in the work zone or the anteroom. Shoe covers worn in the work area are to be removed in the anteroom prior to exiting.
    i. The Owner may choose to monitor air quality throughout the project. If air quality monitoring is required, this requirement will be indicated on the **ICRA Authorization**.

Dust collection mats must be kept clean and changed as needed to remain effective. Additional mats or other measures shall be employed as needed to address differing site conditions/activities.

DEMOBILIZATION AND (RE) OCCUPANCY

Following is the typical sequence for the completion of the Infection Control Interventions.

A. For routine maintenance and Emergency Work, **UVA Project Manager/CAM/RP/Contractor** will coordinate with **EVS** management immediately following completion by calling EVS Dispatch at 2-1555.

B. For Class I-II Work
    1. Construction clean
    2. Barrier cleaned
    3. Terminal clean conducted for Type II work done without a mobile containment unit
    4. UVA Project Manager/CAM/RP/Contractor Inspection

C. For Class III/IV/V Work

Develop timeline for re-occupancy working with IPC including input from applicable teams such as EVS, IT, CE, HSPP. Larger projects may be coordinated by FP&CD, Project Management Office (PMO), etc. and detailed meeting(s) may be required. For all other Class III-V work, the timeline will be discussed and documented during ICRA Authorization review or submitted by email to ICRA Team prior to removal of any ICRA interventions (e.g., barriers, filters, etc.) The typical timeline sequence is below:

1. **Construction Clean** complete following completion of dust generating activities including cleaning of ICRA Barrier HVAC covers, and outside of portable air scrubbers
    i. The HVAC supply and return covers may be removed temporarily to allow for testing and balancing only after an initial construction clean has been done.
    ii. If additional dust-generating activities are needed after the **Construction Clean** has been completed, see C.3.i. below.
2. UBO **TCUO** inspection, if applicable. Project Team achieves substantial completion.
3. Project and ICRA Team take particle count readings and huddle to see if ready for barrier removal and **Terminal Clean** and discuss the following items:
    i. Scope of remaining punch list, CE, IT, HSPP dust generating work and potential requirement for additional ICRA authorizations.
    ii. Timing of **Terminal Clean** (consideration must be made for the timing of delivery/installation of large items that would hinder the thoroughness of the **Terminal Clean** and delivery of patient care items in areas that have remaining Work).
    iii. Timing of barrier cleaning/removal based on remaining punch list/IT/CE work and coordination with EVS for cleaning at former barrier location. Note: Plastic barrier should be placed prior to removal of drywall barrier to contain dust from the hard barrier removal.
    iv. Timing /coordination of training for person involved in work (not move in)
4. EVS/FM re-occupancy inspection with IPC approval will be done on all projects in Highest Risk Areas, all Type D projects, and on any additional projects at the discretion of the IPC representative. Representatives from all three

teams are to be present at the inspection. The RP, or FP&CD representative in consultation with the RP, will be responsible for scheduling the Terminal Clean with EVS with as much advance notice as is possible, preferably at least 7 days for non-urgent projects. This will be done via email to CL EVS Terminal Clean of estimated Project End Date, along with a follow up email closer to the end date to confirm a set time. All work is to be done and work materials removed from site before EVS arrival to ensure a proper Terminal Clean can be done. All surfaces, HVAC, and equipment will be inspected for cleanliness and dust to ensure room is safe for patient occupancy. In the event of a failed inspection, a re-cleaning and inspection will occur before IPC signs off on the area to be suitable for occupancy, using Appendix G .

5. Preparation of space for patient occupancy - any items brought into the space after the final **Terminal Clean** must be removed from shipping boxes and/or cleaned (as applicable) prior to entering the space.
6. **Patient Occupancy**

INFECTION CONTROL RISK ASSESSMENT (ICRA) TRAINING/EDUCATION

A. **Mandatory Training and post-test** must be completed prior to the commencement of **Work**.
   1. It is the responsibility of each person involved in the **Work** to maintain records of training received. A copy of the approved ICRA training certificate must be submitted along with the ICRA permit. The **ICRA Team** may request proof of required training from any person involved in work at the initialization of an **ICRA Authorization** and again at any time during the **Work**.

   2. If it is found that a person involved in work has not completed the **Mandatory Training** required for their role, or does not possess the necessary understanding of the ICRA process to perform in their assigned role, an interim will be appointed to the role until the person involved in work receives appropriate training.

   3. After completing one or more of the following trainings, the certificate should be uploaded into Workday. Evidence of training completion certificate should be submitted with the Infection Control Risk Assessment form.

B. Persons involved in the ICRA process will complete a minimum level of ICRA training (**Mandatory Training**) to qualify them for their role in the process as outlined below and submit with the ICRA permit form:
   1. **Responsible Person** includes completion of one of the following training programs.
      a. Initial training to qualify for Responsible Person Role:
         i. Certified Healthcare Constructor (CHC), or Certified Healthcare Facility Manager (CHFM)
         ii. Construction Infection Control Training Institute (CICTI) Certified Healthcare Manager (CCHM)
         iii. Equivalent training program that has been approved by ICRA Team
      b. Annual Refresher Training in Workday:
         i. When initial training does NOT include requirements for regular continuing education, an annual refresher training developed by the ICRA Team will be required.
   2. **Maintenance Technician** performing Class I-II maintenance Work includes completion of one of the following training programs:
      a. Initial training to qualify for Maintenance Technician Role:
         i. ASHE Managing Infection Prevention During the Construction & Operation of Health Care Facilities™ (ICRA 2.0)
         ii. Construction Infection Control Training Institute (CICTI) Facilities Technician (CCFT)
         iii. Equivalent training program that has been approved by ICRA Team
      b. Annual Refresher Training in Workday developed by the ICRA team
   3. **Contractor's Representative** performing Class III-V **Work** includes completion of one of the following training programs or equivalent (that has been approved by the ICRA Team) prior to commencement of the **Work,** and ability to demonstrate a working knowledge of this plan.
      a. Construction Infection Control Training Institute (CICTI) Certified Healthcare Worker (CCHW)
      b. ASHE Managing Infection Prevention During the Construction & Operation of Health Care Facilities™ (ICRA 2.0)

4. All **Contractors** (persons performing work)
    a. UVA employees performing Work are required to complete basic ICRA training computer-based learning module (CBL) annually in Workday.
    b. Non-UVA **Contractors** performing **Work** will complete a site/project specific orientation prior to performing any **Work**. Orientation may be provided by the **Responsible Person** or the **Contractor**'s **Representative**. If provided by the **Contractor Representative**, the general outline/agenda for this orientation should be submitted to the **Responsible Person** for approval prior to the commencement of any **Work** and should include, at minimum, the following:
        i. Review of the Interventions listed on the **ICRA Authorization** Form:
            a. Why dust control is important and types of work that will generate dust.
            b. Access to and from the work site for personnel, material and equipment.
            c. Use of Public Facilities (e.g. – restrooms, cafeteria, etc.) outside of the confines of the work area.
        ii. Appropriate method and persons to be notified if there is a need to schedule work with an impact outside of the work area.
        iii. **Contractor Representative/Responsible Persons** are responsible for tracking completion of **Mandatory Training** for all site personnel.
        iv. **Contractors** performing very short term or Emergency Work may be excused from the training requirement if the following conditions are met:
            a. These untrained **Contractors** shall be escorted by a person who has undergone **Mandatory Training**.
            b. The escort then assumes the responsibility that the untrained **Contractor** follows all provisions of the plan.
            c. Approval for using non-ICRA trained **Contractors** must be approved by the **Contractor Representative**

5. **Area Manager** (or designee) in the area of the **Work** will receive and review a copy of the **ICRA Authorization** for **Work** occurring in their area and is responsible for disseminating ICRA information to area Team Members.

ENFORCEMENT

A. The **Responsible Person** and the **ICRA Team** will monitor compliance regularly as described below:
    1. Any **Responsible Person** or member of the **ICRA Team** may note non-compliance concerns with any **Work** at any time. When the concern does not present an **Imminent Risk**, it will be reported to the **RP** for the **Work** and the **ICRA Team** for investigation and correction. If the **RP** and/or **Contractor Representative** cannot be reached, **Work** activity resulting in the concern may be stopped until the concern is resolved.

    2. The **RP** will ensure daily monitoring of compliance with ICRA Authorization requirements for ALL Level III-V work being performed under Authorization(s) for which they are responsible. This may include work outside of the limits of construction being completed under separate ICRA Authorization. Record of daily monitoring should be provided on the Daily Monitoring Log (Appendix A)) and the current week of daily logs should be posted at the **Work** site. Daily logs should be kept with the project files. The duty of daily monitoring and record keeping may be delegated to the Contractor Representative, but ultimate responsibility for oversight and quality belongs to the **RP**.

    3. The **ICRA Team** will provide regular compliance monitoring via worksite visits known as ICRA rounds. ICRA rounds will be scheduled on a bi-weekly cadence for ICRA Class III-V projects on the direct Medical Center Campus (University Hospital and adjoining buildings). In addition, ICRA rounds MAY be scheduled for facilities off campus as seen necessary based on risk and availability of staff, or at the request of the **RP** or the **Area Manager**. These rounds will be a collaboration between HE/IPC, HSPP, CC&R, and if possible, the RP of the project. A summary email will be sent out to IPC and FM leadership, as well as the RP of the project noting any IP

and/or ILSM deficiencies. Rounding data will be entered in REDCap. IPC may choose to schedule additional rounds with the RP after interventions are in place, before work starts to ensure compliance is met.

4. The **Responsible Person** will respond to the rounding report by email within 2 business days if any non-compliance issues are noted, indicating that the issues have been corrected or providing a schedule for their correction.

5. Quarterly non-compliance rates are reported to Medical Center Quality Committee via the Infection Prevention and Control subcommittee.

B. **RP** and **ICRA Team** have the authority to stop work that is resulting in an **Imminent Risk** to patients, Team Members, or the public. If the **Work** is stopped due to **Imminent Risk**, the **Contractor Representative** and **RP** will be notified immediately via phone call, and will develop an appropriate mitigation plan. It is the responsibility of the RP to inform FM leadership of the stoppage, and the mitigation plan. **Work** may resume only after **ICRA Team** approval of the plan, appropriate strategies have been taken to mitigate further risk, and appropriate cleaning of dust outside of the work site. IPC may follow patients with potential exposures for the development of related disease depending on the scale of the breach.

C. Contractors who have not completed minimum **Mandatory Training** may be asked to leave the facility.

D. The Daily Monitoring Log (Appendix A) will be used to document inspections of the Work zone. The **Contractor Representative** is responsible for completion of the log and immediate corrective actions, when necessary.

E. The **RP** will review the daily monitoring logs and perform regular inspections of the Work zone for compliance with ICRA requirements.

F. Violations of this plan may result in additional oversight at the expense to the **Work**.

G. Non-compliance notification will be provided via verbal communication with the on-site Contractor and followed up with written documentation to the **RP** and **Contractor Representative**. Repeat infractions will cause a review of the ICRA Authorization with the **Contractor/Contractor Representative, Responsible Person, ICRA Team** and appropriate representatives from **Facilities Management**, and may result in requirements of additional oversight, training, and reporting.

ADDITIONAL RESOURCES

American Society for Healthcare Engineering. ASHE ICRA 2.0 Toolkit. Accessed October 6, 2023. https://www.ashe.org/icra2

Association for Professionals in Infection Control and Epidemiology (APIC) online resources available at www.APIC.org.

Centers for Disease Prevention & Control (CDC) Guidelines for Environmental Infection Control in Health-Care Facilities, 2003. Retrieved September 10, 2024 from http://www.cdc.gov/hicpac/pdf/guidelines/eic_in_HCF_03.pdf

Facilities Guidelines Institute (FGI) 2014. *Guidelines for Design and Construction of Health Care Facilities*. Chicago, IL: ASHE (American Society for Healthcare Engineering of the American Hospital Association. Section - Planning, Design, and Construction/Commissioning.

Approved By: Infection Prevention and Control Subcommittee

APPENDIX A

INFECTION CONTROL RISK ASSESSMENT

DAILY MONITORING LOG FOR CLASSES III, IV, and V

DATE: _____ TIME: _____ PROJECT: _____

Responsible Person: _____ CONTRACTOR: _____

OBSERVATIONS BY: _____

INFECTION CONTROL INTERVENTION (As indicated on ICRA authorization)	Yes	No	N/A	Verbal Notification Given To, Corrective Action Taken, Other Comments.
HEPA Vacuum, personnel & cart cleaning supplies available at the work zone entrance				
Construction barriers intact and seal is secure, no visual evidence of dust escaping the work zone				
Traffic restricted to construction personnel and traffic control signs posted and intact				
Construction personnel using designated entrances/exits and are following designated travel routes				
Walk off/adhesive mats **clean** & adequate to contain construction dust				
Portable air scrubber working properly ducting intact, filters certified as necessary. No dust accumulation at exhaust location.				**Class III, IV, and V Work:** Particle count outside of site: _____ and % reduction of particles at HEPA exhaust (if exhausting to adjacent space): _____
Negative air pressure (-0.01 to -0.05 WC) at barricade entrance maintained & documented in comments Negative air filters clean, Negative air discharge hoses intact				Pressure differential: _____
All windows closed behind barrier. Debris chute (if applicable) closed if not in use				
HVAC vents remain isolated/filtered				
Daily cleaning of the work zone. Anteroom clean. Entrance/exit & adjacent areas free of dust & debris				
Carts appropriately covered without dust during transport of debris and materials				
No food trash found in work zone, or cavities in the work zone; no visible signs of vermin				
New contractors instructed in all ICRA requirements.				
Additional Comments:				

APPENDIX B

INFECTION CONTROL RISK ASSESSMENT

SUPPLEMENTAL INFECTION CONTROL INTERVENTIONS

Dust disturbances during renovation activity, increased traffic and contractor staff in the Restricted Areas may increase bacterial and other fungal content in the air. If not contained this disturbance could possibly increase the infection risk.

1. Adhere to signage in Restricted Areas regarding the requirement for Surgical Attire. Specific requirements will be reviewed and recorded in the ICRA Authorization.
2. Coveralls (and shoe covers, when required) will be put on to enter Restricted Areas and removed in the anteroom. Prior to leaving anteroom clean coveralls/shoe covers will need to be put on to re-enter the Restricted Areas. A clean supply must be available at entrance to each work area.
    a. Coveralls and shoe covers must be worn by personnel in all **Restricted Areas**
    b. All hair must be covered with disposable bouffant cap. Personal hats are not sufficient and should be removed prior to entering **Restricted Area.**
    c. Identification badges must be visible and clean.
    d. The coveralls, etc. must be removed and discarded when leaving the Restricted Area.
2. Large bags, backpacks, or other personal items and/or clothing that are not wipeable (i.e., of porous materials) are **not** to be carried into the Restricted Areas. **All equipment brought into the Restricted Areas must be clean and wiped with disinfectant before entering area.**
3. Dirty equipment/carts should never be moved through the Restricted Areas or in/out of the work zone.
4. Any work done within the Restricted Areas that will create vibration must be prearranged by the RP.
5. Personnel should minimize the number of times they must enter and exit the Work area and travel through the Restricted Areas.
6. Mobile Containment Units (MCU) will not be set up adjacent to carts containing clean supplies/equipment or OR case carts. These items will need to be relocated by designated personnel (i.e., Nursing Personnel). Floors within a 5-foot radius of the Mobile Containment Unit discharge must be cleaned and disinfected immediately prior to activation of booth. Booths should not be used within 15 feet of a room in which there is an active procedure.

I have read and understand the above Supplemental Infection Control Interventions. I will be responsible to see that all of our workers and subcontract workers will follow these precautions. Document is to be kept with daily logs and Project Manager.

_____

Site Supervisor/Superintendent

APPENDIX C

MOBILE DUST CONTAINMENT UNIT (MCU) USAGE CHECKLIST

Before using the MCU, check the following:		YES	NO
1	Before entering the clean space, have you raised the top extension and cleaned the entire MCU - all surfaces, inside and outside, along with the wheels?		
2	Is the HEPA Vacuum in good working order with a **clean** filter and bag?		
3	**Enter date** of most recent annual evaluation (within last 12 months) to document the integrity of the unit and HEPA filter efficiency.	Date:	
4	Are all of the door and top seals in place, with no gaps and in good condition?		
5	Are the power cords and Ground Fault Circuit Interrupter (GFCI) clean and in good condition?		
6	Are your cords elevated off the floor, or taped to the floor to prevent trip hazards?		
7	Do you clean sticky mats on the floor inside the MCU to clean the soles of your shoes before exiting it?		

* **If there are any NO answers to questions #1 through #7, please correct the condition before proceeding**

With the MCU in place, and <u>before usage</u>:		YES	NO
8	Will the ceiling tiles you are going to remove be fully covered by the MCU		
9	Are all the tiles on the perimeter of the MCU flat and with no penetrations that will affect the sealing of the MCU to the ceiling?		
10	Are there any hospital carts or equipment in the way of setting up the MCU correctly?		
11	Are there any objects on the walls that will affect the MCU placement?		

* **If there are any YES answers to questions #8 through #11, have you addressed it?**

* **If there are any YES answers to questions #8 through #11 that cannot be corrected, DO NOT PROCEED. NOTIFY CONTRACTOR AND/OR CONTRACTOR'S REP IMMEDIATELY**

While the MCU is in use:

12	Ensure the HEPA Vacuum is always running while using the MCU
13	Only open the door of the MCU if the HEPA Vacuum is running. Minimize opening and closing the door of the MCU in the clean work area
14	If you need to relocate the MCU to a new work location, first move the MCU to a safe area and clean the MCU before proceeding with work in the new work location
16	Keep all demolished material in the MCU until the MCU has been moved to a safe working location
17	If asked, immediately shut down and close up all work activity, move the MCU to a safe environment and notify Contractor and/or Contractor's rep

Responsible Person or Contractor's Representative – contact information:_____

APPENDIX D
ICRA PRE-DUST GENERATING ACTIVITY CHECKLIST
Keep this checklist with ICRA posted at site

DATE: _____TIME: _____ PROJECT: _____
Responsible Person: _____ CONTRACTOR: _____
OBSERVATIONS BY: _____

INFECTION CONTROL INTERVENTION (As indicated on ICRA authorization)	Yes	No	N/A	Verbal Notification Given To, Corrective Action Taken, and Comments
HEPA Vacuum, personnel & cart cleaning supplies, cart covers available at the work zone entrance.				
Construction barriers intact, including above ceiling barriers where required. Unused doors taped.				
Traffic restricted to construction personnel and traffic control signs posted and intact.				
ICRA Authorization Form, emergency contacts, and sleeve for daily logs posted at ICRA entrance				
Construction personnel trained on designated entrances/exits.				
Walk off/adhesive mats adequate and clean to contain construction dust.				
Air scrubber machine(s) cleaned, **new filters**, ducting cleaned and intact with date of certification within one year, and required speed setting indicated prior to activation.				
Baseline particle concentration tests conducted and recorded in notes. Take as a percent reduction from outside building entrance particle count. Test at discharge only required if discharging into adjacent spaces or near pedestrian pathways. Outdoor air (building entrance) particle count: _____				Percent reduction: Outside of barrier HEPA OFF: ON: Inside of barrier HEPA OFF: ON: Supply grill outside of barrier: At HEPA Discharge:
Negative air pressure (-0.01 to -0.05) established and documented in notes column.				Pressure differential: _____
Check adjacent pressure sensitive areas (i.e., soiled utility rooms) outside barrier for changes in pressure.				
HVAC supply turned down, returns covered per ICRA Authorization Form.				
Anteroom is adequately constructed and contains cleaning supplies (Hepa Vacuum, cleaning wipes, PPE storage area).				
Patients removed and supplies/equipment removed or covered.				
Contractors instructed in all ICRA requirements.				

APPENDIX E
GUIDE FOR MEASURING AND ASSESSING PARTICLE COUNTS

What is particle count measurement?

Particle count monitoring uses particle counters to measure dust concentrations in the air. These measurements can be used to evaluate relative indoor air quality or validate infection control protocols.

What's the reason for conducting particle count monitoring?

Particle count monitoring offers healthcare facilities several infection controls benefits:

- It identifies existing infection control issues that need to be considered.
- It helps assess the effectiveness of hospital protocols for infection control during healthcare construction.
- It ensures that dust control measures surrounding construction and maintenance projects are working.
- It demonstrates that the hospital is protecting patients.

This appendix is to be used as a guide for assessing particle count measurement. Since the particle counts in the air outside of the building can vary from day to day due to weather, season and time of day, and since the air handlers and air scrubbing machines are effective at reducing a percentage of particles, the particle count in any given area can vary from day to day. What should not vary significantly is the percent difference of particles from the outside of the building baseline, as long as that reading is taken at the same location, at relatively the same time each day.

Outdoor Baseline – Anytime a percent difference is assessed, the first measurement that should be taken is the particle count outside of the building, approximately 10ft from the entrance door. The particle counter should be on averaging mode and you should record the particles per liter that are ≥ 0.3microns. The counter should be allowed to run for a minimum of 1 minute.

Indoor Points of Measurement

1. A reading should be taken at the supply air discharge closest to the project site entrance. This is to let you know how well the air handler serving that area is performing.
2. A reading should be taken inside of the construction barrier to serve as a baseline.
3. If you are discharging HEPA scrubbed air into an occupied space, a reading should be taken directly at the discharge of the HEPA air scrubber. This is to show the efficacy of the HEPA filter is providing at least a 90% reduction in particle count from inside the work site.

Percent Difference – Percent difference is calculated by: % Difference = ([Outdoor Concentration – Indoor Concentration] / Outdoor Concentration) x 100.

- According to ASHRAE, MERV 8 is designed to filter 0% of particles smaller than 1 micron, 20% of particles 1-3 microns, and 70% of particles 3-10 microns.
- MERV 14 filters remove 75% of 0.3 to 1 micron, 90% of 1-3 micron, and 95% of 3–10-micron particles. HEPA filtration must remove 99.97% of particles 0.3 microns or larger.

The above percent reductions are achieved directly post filter; there will be some contamination while the air travels down the ductwork and mixes with the air past the discharge. The further away from the discharge you hold the particle counter, the more particles you will count. This is why it so important to get a pre-construction baseline using appendix E and then take weekly (or daily, if required) readings.

For 0.3 microns or greater, the goal is to have 90% (+/-10%) reduction from the outdoor air. A percent reduction of less than 80% outside of the barrier could indicate that dust is escaping from the containment area. Percent reduction less than 80% should be investigated further with documentation of corrective action. A less than 90% reduction for HEPA filtered exhaust could indicate that HEPA is not functioning properly and should be investigated further with documentation of corrective action.

APPENDIX F
CONSTRUCTION/RENOVATION/DEMOLITION/MAINTENANCE IN THE OR AND PROCEDURE AREAS

Owner: OR Leadership		
Revised by: Infection Prevention & Control		
Responsible party	**Major Step**	**Details**
OR Team and OR Manager	1. Identify the work needed in the OR. 2. Place work order with facilities or Clinical Engineering (CE).	Discuss with Help chain Facilities Management WO Link
Facilities	1. Schedule upcoming Terminal Cleaning with EVS prior to beginning work. 2. Email CE Director and SSIT Director with date work will start, room number, and date Terminal Cleaning will be done. 3. When work is complete, perform construction clean up.	1. ICRA review with the Responsible Person (RP) and Area Manager. 2. Facilities/ CE to notify EVS Director when work will be done and coordinates with EVS for Terminal Clean date. 3. Construction clean up including: • Supply and return grills, registers, and diffusers are clean and filters changed. • All debris and attic stock has been removed. • All ceiling tiles are clean and properly in place
EVS Terminal Cleaning	1. Terminal Cleaning per EVS protocol 2. EVS Supervisor to notify Charge RN that Terminal Clean is complete 3. EVS supervisor on duty and OR Charge Nurse, NM, or Nursing Admin On call or designee (OPSC) inspect the room for cleanliness using **Infection Control Risk Assessment Final Checklist (Appendix G)**	All surfaces including: • Walls, trim, floors, countertops, and ceilings should be free of dust and dirt, clean, and disinfected. • Lights and Arms • Windows and blinds are clean. • Bathrooms are clean and disinfected: If applicable • Floors, floor coverings, and wall base are clean
OR Charge nurse	Notify Anesthesia Tech, CE, and/or SSIT that work and Terminal Cleaning have been completed.	Charge nurse notifies the appropriate teams that Terminal Cleaning is complete and all cleaned equipment can be returned/placed in area. **Facilities:** 924-2267 **Clinical Engineering:** 924-2391 **SS IT:** Page 434-970-8286 and enter a call back phone number.
OR Charge Nurse, Nurse Manager, or Nursing Adm. On call	OR Charge Nurse, NM, or Nursing Adm. On call or designee (OPSC) completes **Infection Control Risk Assessment Final Checklist (Appendix G)** to do final inspection with OR team if applicable. Notify appropriate department of deficiencies.	OR Charge Nurse, NM, or Nursing Adm. on call (with IPC if applicable) review the room/area and verify the room is clean and ready for patient care. If there are any deficiencies, notify the appropriate party. Refer to ICRA Authorization form for need for IPC inspection. **Once complete, email Construction Terminal Cleaning Inspection Checklist (Appendix G) to IPC at (@CL Infection Preventionist Group).**
OR team, Anesthesia Tech, CE, SSIT	All **clean** equipment returned/placed in area. Room cleanliness to be reviewed by each OR team member. Notify charge nurse that equipment is back in room.	Returning equipment must be cleaned prior to entering room including the carts used to move the equipment.
Facilities/EVS	**Facilities:** Removes ICRA barrier **EVS:** Cleans under ICRA barrier.	

APPENDIX G
Construction Terminal Cleaning Inspection Checklist

Date of Terminal Clean: Location:
Date of final inspection: Inspection Outcome: Pass Fail
Inspectors:

INSTRUCTIONS:
After Environmental Services (EVS) performs a Terminal Clean and prior to the construction barriers being disassembled, the following check list below should be completed and all failed areas indicated by "no" should be rectified.

1. Notify EVS (2-1555) to request their presence during Terminal Clean inspection.
2. Don non-sterile gloves and wipe hands over all surfaces below to assess presence of dust. For surfaces unable to reach (i.e., overhead lights), perform a visual inspection.
3. Notate the following as yes or no depending on presence of dust.
4. Take photos of opportunities for those indicated as "no".
5. Complete form and send the form and applicable photos to Infection Prevention & Control via email (@CL Infection Preventionist Group)

Areas for inspection	Yes	No	N/A	Comments
All surfaces including: walls, trim, floors, countertops, lights, and ceilings clean and free of dust				
All cabinets and drawers are clean inside and out				
Supply and return grills, registers, and diffusers are clean				
Windows and blinds are clean				
Bathrooms are clean and disinfected				
Soap and hand sanitizer dispensers are present and filled.				
All debris and attic stock has been removed				
All ceiling tiles are clean and properly in place				
All equipment is returned and disinfected				
Comments:				

APPENDIX H
DUST MITIGATION MEASURES FOR THE EXTERIOR PROJECT SITE

Dust Mitigation Measures for the Exterior Project Site	Date Completed
Contractor	
Any activity that creates dust will be kept continuously wet	
Loose debris will be wet when loaded	
Debris hauled away by trucks will be moist and covered prior to hauling	
Road ways will be kept free of dirt build-up and washed daily	
Contractor has established a daily check list to be filled out by site personnel dealing with site cleanliness and dust control	
Avoid damaging the underground water system (i.e., buried pipes) to prevent soil and dust contamination of the water	
Contractor will stop all dust producing activities if water is not available or if a situation arises leading to uncontrollable dust creation	
Schedule permitting, Contractor to stage activities so that multiple dust generating activities are not happening concurrently	
Monitoring	
At the discretion of HE/IPC, air sampling to be performed to monitor air quality and identify any dust mitigation problems	
Unannounced monitoring for dust compliance by HE/IPC, Facilities and project site Manager	
Specific traffic control measures per individual project will be assessed and instituted as part of the Risk Assessment	
Concerns from the department managers who may be affected will be voiced to the Contractor through the Responsible Person and corrective action will be taken	
Hospital Operating Room personnel have been given the authority to halt the construction if an emergency situation related to vibration develops within the operating rooms	
A contact phone number is in place to answer general questions regarding the project. The phone number is:	

Project Manager **Contractor**

Department of Hospital Epidemiology & Infection Control **Date**

Always refer to the official online version. Printed copies are for temporary reference only.

Appendix I

CONSTRUCTION, RENOVATION, DEMOLITION AND MAINTENANCE INFECTION CONTROL RISK ASSESSMENT

A copy of the relevant drawings for projects of Class III, IV, and V must be submitted along with ICRA permit

A copy of approved ICRA training certificate must be submitted along with ICRA permit

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***Table A – Work Activity Types:** Select Type of Activity

Type A	**Inspection and non-invasive activities.** These include, but are not limited to: ☐ Removal of ceiling tile for visual inspection-limited to 1 tile per 50 square feet with limited exposure time. ☐ 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. ☐ Clean plumbing activity limited in nature.
Type B	**Small scale, short duration activities (work completed in single shift) that create minimal dust.** These include, but are not limited to: ☐ 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). ☐ Fan shutdown/startup. ☐ Installation of electrical devices or new flooring that produces minimal dust and debris. ☐ The removal of drywall where minimal dust and debris is created. ☐ Controlled sanding activities (e.g., wet or dry sanding) that produce minimal dust and debris.
Type C	**Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies (e.g., counter tops, cupboards, sinks).** These include, but are not limited to: ☐ Removal of preexisting floor covering, walls, casework, or other building components. * ☐ New drywall placement. * ☐ Renovation work in a single room. * ☐ Non-existing cable pathway or invasive electrical work above ceilings. ☐ The removal of drywall where a moderate amount of dust and debris is created.* ☐ Dry sanding where a moderate amount of dust and debris is created. * ☐ Work creating significant vibration and/or noise. ☐ Any activity that cannot be completed in a single work shift.
Type D	**Major demolition, construction, and renovation projects**. These include, but are not limited to: ☐ Removal or replacement of building system component(s). ☐ Removal/installation of drywall partitions. * ☐ Invasive large-scale new building construction. * ☐ Renovation work in two or more rooms. *
Note: *Items that are typically associated with high levels of dust generation. This is not a comprehensive list; each project should be evaluated individually	

***Table B – Risk Groups:** Select the Determined Risk

Low Risk Non-patient care areas such as:	Medium Risk Patient care support areas such as:	High Risk Patient care areas such as:	Highest Risk Procedural, invasive, sterile support and highly compromised patient care areas such as:
☐ Public hallways and gathering areas not on clinical units. ☐ Office areas not on clinical units. ☐ Break rooms not on clinical units. ☐ Bathrooms or locker rooms not on clinical units. ☐ Mechanical rooms not on clinical units. ☐ EVS closets not on clinical units.	☐ Waiting areas. ☐ Clinical Engineering. ☐ Materials management. ☐ Sterile processing department - dirty side. ☐ Kitchen, cafeteria, gift shop, coffee shop, and food kiosks.	☐ All acute care units and patient care areas (including outpatient). ☐ Emergency department. ☐ Occupational health clinics. ☐ Pharmacy - general work zone. ☐ Medication rooms and clean utility rooms. ☐ Imaging suites: diagnostic imaging. ☐ Clinical laboratory. ☐ Linen Room.	☐ All transplant and intensive care units. All oncology units. ☐ OR theaters and restricted areas. ☐ Procedural suites. ☐ Pharmacy compounding. ☐ Sterile processing department - clean side. ☐ Transfusion services. ☐ Dialysis ☐ Imaging suites: invasive imaging.

Note: *Designation of grouping for any location may be changed at the discretion of HE/IP&C | * Environmental conditions that could affect human health, such as sewage, mold, asbestos, gray and black water will require Class of Precautions IV for LOW and MEDIUM Risk Groups and Class of Precautions V for HIGH and HIGHEST Risk Groups.

***Table C – ICRA Classification:** Select Class due to Type and Risk

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

Matrix of Precautions for Construction, Renovation and Operations

Table D – Infection Control Interventions | Before and During Work Activity

Class of Precautions	Mitigation Activities (Performed Before and During Work Activity)	
Class I ***Does Not Need IP&C Approval***	1. Perform noninvasive work activity as to not block or interrupt patient care. 2. Perform noninvasive work activities in areas that are not directly occupied with patients. 3. Perform noninvasive work activity in a manner that does not create dust.	4. Immediately replace any displaced ceiling tile before leaving the area and/or at end of noninvasive work activity. 5. Contractor is educated before the start of the project about the importance of adhering to Infection Prevention & Control measures. 6. HEPA vacuum and wipes should be kept on work site for just in case events of dust being found to clean the work area upon completion of task.
Class II ***Does Not Need IP&C Approval***	1. Perform only limited dust work and/or activities designed for basic facilities and engineering work. 2. Perform limited dust and invasive work following standard procedures approved by the organization.	3. Provide active means to prevent air-borne dust from dispersing. 4. This Class of Precautions must never be used for construction or renovation activities.
Class III ***Requires IP&C Approval***	1. Provide active means to prevent airborne dust dispersion into the occupied areas. 2. Means for controlling minimal dust dispersion may include hand-held HEPA vacuum devices, appropriate and approved temporary ICRA barrier (polyethylene plastic containment, Edge Guard, etc.), or isolation of work area by closing room door. 3. Remove or isolate return air diffusers to avoid dust from entering the HVAC system. 4. Remove, isolate, or damp down the supply air diffusers to avoid positive pressurization of the space. 5. If work area is contained, then it must be neutrally to negatively pressurized at all times.	6. Apply the approved containment tape to seal gaps between barriers, ceiling and floor. 7. Install a dust control mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly no longer adhesive. 8. Maintain clean surroundings when area is not contained by way of damp mopping or HEPA vacuuming surfaces. 9. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area. 10. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU). 11. For adjacent outdoor work, many of the above interventions may not apply. However, additional interventions may be required to isolate work from building entrances and mitigate work impact to patient care (e.g., re-route of patient traffic, wet down excavation areas, charcoal filters on air intakes, additional physical barriers at entrance/windows).
Class IV ***Requires IP&C Approval***	1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers extending to the ceiling or if ceiling tile is removed, to the deck above All penetrations through the barrier shall meet the appropriate fire rating requirements. 2. Refer to Products and Materials, Section A 1-7 for approved barriers that must be constructed in a manner that prevents dust release. 3. Seal all penetrations in containment barriers, including floors and ceiling, using approved materials (i.e., approved containment tape, UL schedule firestop if applicable for barrier type). 4. Containment units or mobile containment units (MCUs) approved for Class IV precautions in small areas, when work is totally contained by the unit and utilizes HEPA-filtered exhaust air. 5. Install an adhesive (dust collection) "walk-off" mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly soiled. 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 work area. The airflow must cascade from outside to inside the work area. The entire work area must remain negatively pressurized. 9. Maintenance of negative air pressurization (range: -0.01 to -0.05. wc) of the entire workspace through use of 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. Air pressure to be monitored and documented daily.	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 (e.g., 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 (range: -0.01 to -0.05. wc). 13. Contain all trash and debris in the work area. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained 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. HEPA vacuuming of clothing or use of cover suits is acceptable. 16. Workers must wear shoe covers prior to entry into the work area. Shoe covers must be changed prior to exiting into the occupied space (non-work area). Damaged shoe covers must be immediately changed. 17. Install an adhesive (dust collection) "walk off" mat at entrance of contained work area based on facility policy. Adhesive mats must be changed routinely and when visibly soiled. 18. Collect particulate data during work to monitor and ensure that contaminates do not enter the occupied spaces. Routine collection of particulate samples will be used to verify HEPA filtration efficiencies. 19. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU).

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Class V ***Requires IP&C Approval***	1. Construct and complete critical barriers meeting NFPA 241 requirements including: Barriers extending to the ceiling or, if ceiling tile is removed, to the deck above. All penetrations through the barrier shall meet the appropriate fire rating requirements. 2. Refer to Products and Materials, Section A 1-7 for approved barriers that must be constructed in a manner that prevents dust release. 3. All containment units or mobile containment units (MCUs) must be built in a manner that prevents dust dispersion. Barriers must be affixed to ground and ceiling in a manner that is secure from movement or damage. Apply approved containment tape to seal gaps between barriers, ceiling or floor. 4. Containment units or mobile containment units (MCUs) approved for Class IV precautions require HEPA-filtered exhaust air. 5. Utilize anteroom and require all personnel to pass through this room so that they can be vacuumed using a HEPA vacuum cleaner before cleaning the worksite. In certain situations, wearing coveralls and/or shoe covers upon leaving the worksite may also be required. 6. Install an adhesive (dust collection) "walk-off" mat inside of entrance to contained work area. Adhesive mats must be changed routinely and when visibly soiled. 7. Remove or isolate return air diffusers to avoid dust entering the HVAC system. 8. Remove or isolate the supply air diffusers to avoid positive pressurization of the space. 9. Negative airflow pattern must be maintained from the entry point of the anteroom into the work area. The airflow must cascade from outside to inside the work area. The entire work area must remain negatively pressurized. Continuous air pressure monitoring (range: -0.01 to -0.05 wc) and daily particle count monitoring outside of work entrance is required. 10. Maintenance of negative pressurization of the entire workspace by use of HEPA exhaust air systems directed outdoors.	11. Exhaust discharged directly to the outdoors that is 25 feet or greater from entrances, air intakes and windows does not require HEPA-filtered air. 12. 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. 13. Exhaust into shared or recirculating HVAC systems, or other shared exhaust systems (bathroom exhaust) is **not acceptable.** 14. 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. 15. Contain all trash and debris in the work area. Nonporous/smooth and cleanable containers (with a hard lid) must be used to transport trash and debris from the work areas. These containers must be damp-wiped cleaned and free of visible dust/debris before leaving the contained work area. 16. Personnel will be required to wear disposable bunny suit while entering a restricted area going to the work site. Remove and dispose the bunny suit in anteroom before entering work site. Clean disposable bunny suit must be donned before leaving the anteroom. 17. 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. 18. 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. 19. Collect particulate data during work to monitor and ensure that contaminates do not enter the occupied spaces. Routine collection of particulate samples will be used to verify HEPA filtration efficiencies. 20. Coordinate with EVS for terminal clean (exception for projects entirely contained within MCU).

If applicable, assess the potential risk to areas surrounding the project and the need for additional mitigation measures using Table E

Table E – Surrounding Area Assessment

Unit Below:	Unit Above:	Unit Lateral:	Unit Behind:	Unit in Front:
Risk Group: Select Below Risk	Risk Group: Select Above Risk	Risk Group: Select Lateral Risk	Risk Group: Select Behind Risk	Risk Group: Select Front Risk
Contact:	Contact:	Contact:	Contact:	Contact:
Phone:	Phone:	Phone:	Phone:	Phone:
Additional Controls: ☐ Noise ☐ Vibration ☐ Dust Control ☐ Ventilation ☐ Pressurization ☐ Vertical Shafts ☐ Elevator/Stairs **Systems Impacted:** ☐ Data ☐ Mechanical ☐ Med Gases ☐ Hot/Cold Water	**Additional Controls:** ☐ Noise ☐ Vibration ☐ Dust Control ☐ Ventilation ☐ Pressurization ☐ Vertical Shafts ☐ Elevator/Stairs **Systems Impacted:** ☐ Data ☐ Mechanical ☐ Med Gases ☐ Hot/Cold Water	**Additional Controls:** ☐ Noise ☐ Vibration ☐ Dust Control ☐ Ventilation ☐ Pressurization ☐ Vertical Shafts ☐ Elevator/Stairs **Systems Impacted:** ☐ Data ☐ Mechanical ☐ Med Gases ☐ Hot/Cold Water	**Additional Controls:** ☐ Noise ☐ Vibration ☐ Dust Control ☐ Ventilation ☐ Pressurization ☐ Vertical Shafts ☐ Elevator/Stairs **Systems Impacted:** ☐ Data ☐ Mechanical ☐ Med Gases ☐ Hot/Cold Water	**Additional Controls:** ☐ Noise ☐ Vibration ☐ Dust Control ☐ Ventilation ☐ Pressurization ☐ Vertical Shafts ☐ Elevator/Stairs **Systems Impacted:** ☐ Data ☐ Mechanical ☐ Med Gases ☐ Hot/Cold Water

Noise & Vibration Mitigation Strategies

- ☐ Use diamond drills instead of powder-actuated fasteners.
- ☐ Schedule noise-making periods with adjacent spaces.
- ☐ Use beam clamps instead of shot.
- ☐ Prefab where possible.
- ☐ Use tin snips to cut metal studs instead of using a chop saw.
- ☐ Install metal decking with vent tabs, then use cellular floor deck hangers.
- ☐ Consider compression style fittings instead of soldering, brazing, or welding.
- ☐ Wet core drill instead of dry core or percussion.
- ☐ Instead of jackhammering concrete, use wet diamond saws.
- ☐ Use HEPA vacuums instead of standard wet/dry vacuums.
- ☐ Use mechanical joining system sprinkler fittings instead of threaded.
- ☐ Where fumes are tolerated, use chemical adhesive remover (flooring glue) instead of mechanical.
- ☐ To remove flooring, consider abrasive blasting instead of using a floor scraper.
- ☐ Use electric sheers instead of reciprocating saw for ductwork cutting.
- ☐ Install exterior man/material lifts.

Ventilation & Pressurization Mitigation Strategies

- ☐ HEPA to exterior.
- ☐ Install temporary ductwork.
- ☐ Utilize temporary HVAC equipment.
- ☐ Vacate the area.
- ☐ Install temporary partitions.
- ☐ Use carbon filtration to filter odors.

Impact to Other Systems Mitigation Strategies

- ☐ Schedule outages.
- ☐ Provide temporary systems.
- ☐ Back-feed electricity or medical gases.

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INFECTION CONTROL RISK ASSESSMENT FOR CONSTRUCTION/RENOVATION/DEMOLITION AND ENVIRONMENTAL CONTROL OF INVASIVE FUNGAL INFECTIONS PLAN

PLEASE PUT THIS PAGE ON TOP WHEN POSTING AT CONSTRUCTION SITE

ICRA 2.0 Infection Control Risk Assessment and Permit	Project Number:				
	Physical Location:			Project Name:	
Project Manager/Responsible Person		Phone		Original Project Start Date	
Contractor Performing Work		Phone		Project End Date	
Approving Authority (IP&C)		Phone			
PM/RP Supervisor		Phone			

Please note that the signature below is approval of the work activity as described and assessed documented here.
Should the scope of work change or the discovery of additional toxic or biological substances occur, STOP WORK and seek additional approval and guidance before proceeding.

Description of Work, Scope of Project, and Additional Comments/Information from RP or Contractor

1. Type of Activity Select Type of Activity
Type A: Non-Invasive
Type B: Small-scale, short duration
Type C: Large-scale, longer duration
Type D: Major demolition, construction
2. Patient Risk Area Select the Determined Risk
Low: Non-patient care area
Medium: Patient care support areas
High: Patient care areas
Highest: Invasive, sterile, or highly compromised care

3. Class of Precautions Select Class due to Type and Risk

	TYPE A	**TYPE B**	**TYPE C**	**TYPE D**
Low	I	II	II	III
Medium	I	II	III	IV
High	I	III	IV	V
Highest	III	IV	V	V

Signatures of Approval

Responsible Person: (Design or Facilities)		Date:	
Area Manager:		Date:	

Exceptions / Additions to this permit are noted below or by attached memoranda

Date	**Initials**	**Explanation:**

IP&C Authorization	**Date**	**Signature**
IP&C Approval for Project to Start (Classes III-V)		
IP&C Approval for Re-Occupancy (Yes/No)?		