HACKETTSTOWN REGIONAL MEDICAL CENTER
ADMINISTRATIVE POLICY MANUAL

GUIDELINES FOR PREVENTION OF HOSPITAL ACQUIRED INFECTIONS DURING HOSPITAL MAINTENANCE, CONSTRUCTION AND RENOVATION

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Effective Date: 9/1/2010		**Policy No:**	**IC023**
Cross Referenced: AD36A		**Origin:**	**Infection Control**
Reviewed Date: November 2012		**Authority:**	**Infection Control**
Revised Date:		**Page:**	**1 of 10**

SCOPE: This policy applies to all maintenance, construction and renovation at Hackettstown Regional Medical Center (HRMC).

PURPOSE: The intent of this policy is to minimize hospital acquired infections to susceptible individuals that may arise as a result of exposure to organisms released into the environment during construction and renovation activities. It is necessary to establish protective measures during construction, demolition, and remodeling activities in hospitals, to control dispersal of air and water-borne infectious agents. The most notable organisms are Aspergillus and Legionella. Activities that disturb walls, ceilings, or floor spaces, may cause fungal spores and a variety of microorganisms to become airborne, inhaled by a susceptible individual, and cause disease.

DEFINITIONS:
Aspergillus: a fungus ubiquitous in ceiling and wall spaces where dust has accumulated
Legionella: fungal spore that is water dwelling but airborne spread; can cause pneumonia

POLICY: All maintenance, construction and renovation activities shall be defined and managed in such a way that occupants' exposure to dust, moisture and their accompanying hazards is limited. Controlling construction dust and dirt will further serve to protect staff and visitors, as well as sensitive procedures and equipment, from possible ill effects.

PROCEDURE

A. The Manager of Maintenance (Maintenance) and/or the Project Manager will notify the Infection Control Practitioner (ICP) of planned work to obtain input prior to the start of work for construction and renovation activities.
B. The ICP will complete the Infection Control Risk Assessment (ICRA) to establish with construction managers all necessary and appropriate protective measures. (Attachment 1)
C. The ICP will determine whether construction poses a sufficient increased risk to require/recommend that patients be relocated to other areas not affected by construction dust.
D. The ICP will inform all contractors and maintenance personnel of these infection control guidelines.
E. The ICP will routinely monitor construction renovation areas for compliance. (Attachment 2)
F. Maintenance will provide advanced notification of changes in plans that may alter the risks, or interruptions in electrical, water supply or air conditioning. Scheduled interruptions will be made for low activity time periods such as nights or weekends.
G. Environmental Services will work with Maintenance to minimize dust during construction through damp mopping and to thoroughly clean new and renovated areas before admitting or readmitting patients.
H. Staff members who notice construction activities taking place without proper barriers should immediately notify Maintenance, the Project Manager and/or the ICP.
I. Projects may be shutdown immediately if imminent danger to patients, visitors, contractors, or health care workers exists.

J. Contractors not in compliance with infection control policies shall be subject to removal from the project.

K. The ICP will conduct an epidemiologic investigation, including culture confirmation when a cluster of infections potentially related to construction/renovation is identified.

REFERENCES

Olmsted, R. APIC Infection Control and Applied Epidemiology: Principles and Practice, Mosby Year Book, Inc. 1996

Center for Disease Control and Prevention Healthcare Infection Control Practice Advisory Committee (HICPAC) "Guideline for Environmental Infection Control in Healthcare Facilities", April, 2000.

AJIC, APIC State of the Art Report: The Role of Infection Control during Construction in Healthcare Facilities, April 2000

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Hackettstown Regional Medical Center

INFECTION CONTROL RISK ASSESSMENT

	Permit No.
Location of Construction:	Project Start Date:
Project Coordinator:	Estimated Duration:
Contractor Performing Work:	Permit Expiration Date:
Supervisor:	Telephone

Step One

Using the following table, **identify the type of construction project activity** (Type A-D)

Type A	**Inspection and Non-Invasive Activities.** Includes, but is not limited to: ▪ removal of ceiling tiles for visual inspection limited to 1 tile per 50 square feet ▪ painting (but not sanding) ▪ wallcovering, electrical trim work, minor plumbing, and activities which do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.
Type B	**Small scale, short duration activities which create minimal dust** Includes, but is not limed to: ▪ installation of telephone and computer cabling ▪ minor duct work or electrical work above ceilings ▪ access to chase spaces ▪ cutting of walls or ceilings where dust migration can be controlled.
Type C	**Work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies** Includes, but is not limed to: ▪ sanding of walls for painting or wall covering ▪ removal of floor coverings, ceiling tiles and casework ▪ new wall construction ▪ major duct work or electrical work above ceilings ▪ major telephone or computer cabling activities ▪ any activity which cannot be completed within a single work shift.
Type D	**Major demolition and construction projects** Includes, but is not limed to: ▪ activities which require consecutive work shifts ▪ requires heavy demolition or removal of a complete building system ▪ new construction.

Step One Determination: Type

Infection Control Risk Assessment

Step Two

Using the following table, **identify the Patient Risk Groups** that will be affected. If more than one risk group will be affected, select the higher risk group:

Group 1 Lowest Risk	Group 2 Medium Risk	Group 3 Medium-High Risk	Group 4 Highest Risk
• Office Areas • Mech. Room • Grounds	• All patient care units • E.S. • Elevators	• ICU • Emergency Room • Labor & Delivery • Laboratories (specimen) • Newborn Nursery • Same Day Surgery • Pharmacy • Post Anesthesia Care Unit • Surgical Units • Linen • Radiology	• Any area caring for immunocompromised patients • Central Sterile Supply • Negative pressure isolation rooms • Oncology • Operating rooms including C-section rooms

Step Two Determination: Group Risk

Step Three

Match the **Patient Risk Group** (***Low, Medium, Medium-High, Highest***) with the planned... **Construction Project Type (*A, B, C, D*)** on the following matrix, to find the... **Class of Precautions (*I, II, III, or IV*)** or level of infection control activities required. Class I-IV or Color-Coded Precautions are delineated on the following page.

IC Matrix – Class of Precautions: Construction Project by Patient Risk

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

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

Step Three Determination: Class

Infection Control Risk Assessment

Description of Required Infection Control Precautions by Class

	During Construction Project	Upon Completion of Project
Class I	1. Execute work by methods to minimize raising dust from construction operations. 2. Immediately replace a ceiling tile displaced for visual inspection.	1. Wipe work surfaces with disinfectant.
Class II	1. Provide active means to prevent airborne dust from dispersing into atmosphere. 2. Water mist work surfaces to control dust while cutting. 3. Seal unused doors with duct tape. 4. Block off and seal air vents. 5. Place dust mat at entrance and exit of work area. 6. Remove or isolate HVAC system in areas where work in being performed.	1. Wipe work surfaces with disinfectant. 2. Contain construction waste before transport in tightly covered containers. 3. Wet mop and/or vacuum with HEPA filtered vacuum or central vacuum system before leaving work area. 4. Remove isolation of HVAC system in areas where work is being performed.
Class III	1. Remove or Isolate HVAC system in area where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic, to seal area from non-work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 4. Contain construction waste before transport in tightly covered containers. 5. Cover transport receptacles or carts. Tape covering unless solid lid.	1. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department and Infection Control Department and thoroughly cleaned by the owner's Environmental Services Department. 2. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 3. Vacuum work area with HEPA filtered vacuums or central vacuum system. 4. Wet mop area with disinfectant. 5. Remove isolation of HVAC system in areas where work is being performed.

Infection Control Risk Assessment

Description of Required Infection Control Precautions by Class (continued)

	During Construction Project	Upon Completion of Project
Class IV	1. Isolate HVAC system in area where work is being done to prevent contamination of duct system. 2. Complete all critical barriers i.e. sheetrock, plywood, plastic to seal area from non work area or implement control cube method (cart with plastic covering and sealed connection to work site with HEPA vacuum for vacuuming prior to exit) before construction begins. 3. Maintain negative air pressure within work site utilizing HEPA equipped air filtration units. 4. Seal holes, pipes, conduits, and punctures appropriately. 5. Construct anteroom and require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving work site or they can wear cloth or paper coveralls that are removed each time they leave the work site. 6. All personnel entering work site are required to wear shoe covers. Shoe covers must be changed each time the worker exists the work area. 7. Do not remove barriers from work area until completed project is inspected by the owner's Safety Department and Infection Control Department and thoroughly cleaned by the owner's Environmental Services Department.	1. Remove barrier material carefully to minimize spreading of dirt and debris associated with construction. 2. Contain construction waste before transport in tightly covered containers. 3. Cover transport receptacles or carts. Tape covering unless solid lid. 4. Vacuum work area with HEPA filtered vacuums or central vacuum system. 5. Wet mop area with disinfectant. 6. Remove isolation of HVAC system in areas where work is being performed.

Infection Control Risk Assessment

Step 4
Identify the areas surrounding the project area and their appropriate risk group.

Location of Unit Relative to Construction	Name of Unit	Risk Group
Below		
Above		
Lateral		
Lateral		
Other:_____		
Other:_____		
Other:_____		
Other:_____		

Step 5
Identify specific site of activity (e.g., patient rooms, medication room, etc.).

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

Step 7
Identify containment measures, using prior assessment. What types of barriers (e.g., solids wall barriers)? Will HEPA filtration be required?
(Note: Renovation/construction area shall be isolated from the occupied areas during construction and shall be negative with respect to surrounding areas

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

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

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

Step 11
Do the plans allow for the required number and type of hand washing sinks?

Infection Control Risk Assessment

NO.

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

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

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

Approval
Infection Practitioner: _____ Date: _____

OR

Safety Officer: _____

Contractor's Representative: _____ Date: _____

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Construction Project Safety - Weekly Compliance Worksheet

Project Location: _____ Project Description: _____ Surveyors: _____

Compliance Indicator	/ / / NO	/ / / NA	/ / / NO	/ / / NA	/ / / NO	/ / / NA	/ / / NO	/ / / NA	/ / / NO	/ / / NA	/ / / NO	/ / / NA
1. ILSM requirements are appropriate for job and in effect.	O	O	O	O	O	O	O	O	O	O	O	O
2. Fire protection features are appropriate and in place.	O	O	O	O	O	O	O	O	O	O	O	O
3. Hazardous Materials are properly used and stored on construction site. MSDS available.	O	O	O	O	O	O	O	O	O	O	O	O
4. Hand/power tools and other construction equipment are in proper working order.	O	O	O	O	O	O	O	O	O	O	O	O
5. Welding and cutting is performed in accordance to hot work permit.	O	O	O	O	O	O	O	O	O	O	O	O
6. Electrical systems safely intact and working properly.	O	O	O	O	O	O	O	O	O	O	O	O
7. Site is secure from unauthorized persons.	O	O	O	O	O	O	O	O	O	O	O	O
8. Construction workers are wearing proper identification.												
9. Site is free from hazards.	O	O	O	O	O	O	O	O	O	O	O	O
10. Infection control measures are followed according to permit.	O	O	O	O	O	O	O	O	O	O	O	O

Date	Deficiency Comments:

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Construction Project Safety - Weekly Compliance Worksheet

Compliance Indicator Cheat Sheet	What to look for:
1. ILSM requirements are appropriate for job and in effect.	ALL Projects: 1) All means of egress clear of obstructions 2) Exit signs posted and lit. 3) Smoke detectors deactivated or covered by Plant Services. 4) Construction area clean and orderly. In Accordance to ILSM matrix: 1) Daily egress inspection form posted 2) Temporary construction partitions smoke-tight and constructed of non-combustible materials. 3) Fire-fighting equipment training conducted. 4) Fire watch provided.
2. Fire protection features are appropriate and in place.	1) Fire Extinguishers properly tagged and inspected. 2) Smoke/fire cart in place and inspected. 3) Additional fire protection in place and accessible by all workers.
3. Hazardous Materials are properly used and stored on construction site. MSDS available.	1) All materials (including flammable materials) are properly stored. 2) Waste disposed of properly. 3) MSDS can be located by all workers.
4. Hand/power tools and other construction equipment are in proper working order.	As states.
5. Welding and cutting is performed in accordance to hot work permit.	1) Compressed gas cylinders are properly secured. 2) No visible damage to hoses, torches, or gauges. 3) Extra fire extinguishers present at site of welding/cutting. 4) Hot work permit properly completed and posted at work location. 5) Fire alarm system properly set to allow hot work to be done without activating fire alarm system. 6) Welding curtains and mats present as required.
6. Electrical systems safely intact and working properly.	Temporary lighting in place and junction boxes and panels covered.
7. Site is secure from unauthorized persons.	Jobsite locked when construction workers are not present.
8. Construction workers are wearing proper identification.	As stated.
9. Site is free from hazards.	Unnecessary safety and health hazards are eliminated.
10. Infection control measures are followed according to permit.	Refer to site Infection Control Permit for requirements.

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