Creating a Comprehensive Infection Control Plan for Construction and Renovation Projects

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Nothing to disclose

Learning Objectives

• Employ effective dust abatement techniques
• Interpret and utilize 2010 FGI ICRA Guidelines
• Create a comprehensive Infection Control During Construction Plan

2010 FGI Guidelines

1.2-3 Infection Control Risk Assessment (ICRA)

The infection control risk assessment is a multidisciplinary, documented assessment process intended to proactively identify and mitigate risks from infection that could occur during construction activities. This process identifies and takes into account the patient population at risk, the nature and scope of the project, and the functional program of the health care facility. The ICRA determines the potential risk of transmission of various air and waterborne biological contaminants in the facility.
2010 FGI Guidelines

1.2-3.1.1 ICRA Requirement
For a health care facility project to support safe designs, finishes, surfaces, and HVAC/plumbing systems, an infection control assessment shall be a part of an integrated facility planning, design, construction, and commissioning activities.

1.2-3.1.2 ICRA Timing
An ICRA shall be conducted during the early planning phase of a project, before construction begins, and continue through the project construction and commissioning.

1.2-3.1.4 ICRA Recommendations
Based on the results of the initial stage of the ICRA, the owner shall provide the following recommendations for incorporation in the functional program:

(1) Design recommendations generated by the ICRA
(2) Infection Control Risk Mitigation Recommendations (ICRMRs)

Determining Dust Control Measures

STEP 1: Type of Construction
- How big is the construction project?
- How ill/frail are the patients?
- Non-patient area?
- Ambulatory Patient / Patient access area?
- In-patient area / High risk ambulatory?
- Major renovation?

STEP 2: Identify the Risk Group

STEP 3: Project Class
Design Elements

1.2-3.2 ICRA Considerations
The ICRA shall address, but not limited to covering, the following:

- 1.2-3.2.1 Design Elements:
  - Airborne and Protective Isolation Rooms
  - Hand Hygiene
  - HVAC
  - Surfaces and Finishes
  - Impact on Water Systems

Design Elements

ICRA Compliance

1.2-3.3 Compliance Elements

1.2-3.3.1 ICRA Documentation
This written record shall remain an active part of the project documents for the duration of the construction project and through commissioning:

- Infection Control Risk Mitigation Recommendations (ICRMR)
- Monitoring Plan
  - Daily/weekly checklist to verify described methods are in place
- Plans which describes specific methods by which transmission of contaminants will be avoided
  - Barriers, negative pressure, sticky mats, HEPA filters, etc
- Communication
  - Report checklist findings to Infection Control/Safety Committee
Dust Control Measures

1.2-3.4 Infection Control Risk Mitigation

1.2-3.4.1 ICRMR Planning

Infection control mitigation recommendations (ICMRs) shall be prepared by the ICRA team and shall, at a minimum, address the following:

- Patient placement
- Barriers and other protective measures
- Protection from demolition
- Training
- Debris and traffic flow
- Bathrooms and food for construction workers

Barrier For Dust Control

Tight to ceiling and walls

Door Closed

Zipper Closed
Infections associated with hospital renovations are a concern due to the vulnerability of patients who are near the construction activities. The control of infection risks is generally formalized during these periods as essential and long-term. Dust containment is a critical component in the control of fungi in patient areas as well as the prevention of illness in patients, visitors and staff. It is the policy of the hospital that whenever work creates an open space between construction areas and other dust or possible fungi-containing areas, EHS, the Department of Epidemiology and Facilities will conduct a careful evaluation of these areas. The degree to which the project will require dust abatement measures is determined by completing an Infection Control Risk Assessment (ICRA). EHS, Epidemiology and the NYP/PM will monitor compliance with the procedures described in the policy.

Although each project is unique in terms of required construction, and the location and vulnerability of nearby patients, certain general precautions are prudent. The purpose of these guidelines and the ICRA is to enhance the prevention of illness in patients who may be immune-compromised and susceptible to fungal infections and others who may be sensitive or otherwise allergic to materials found in or carried by dust. These guidelines apply to all activities in the hospital that may create dust, aerosolize fungal spores, or generate other antigens or irritating materials that will cause illness or discomfort. All GC/CM staff are expected to comply with these requirements.
Dust Control Plan

Air Flow in Construction Sites

A1.2-3.4.1.2 Ventilation of the construction space
Airflow into the construction zone from occupied spaces should be maintained by means of a dedicated ventilation/exhaust system for the construction area.

- Location of exhaust discharges
- Cleaning of existing building systems
- Visible display of airflow in high risk areas
- Pressure differential of at least 0.03 inch water gauge

CREATING NEGATIVE PRESSURE
Creating Negative Pressure

- HEPA Filter
- Ante Room
- Construction Site
- Construction Site Entrances

Creating Negative Pressure

Exhausting HEPA filtered air
Creating Negative Pressure

Checking HEPA Air Scrubbers

Air Flow Indicator
Watering Down Excavation

ASHRAE* Standard 170

- Surgical Classification
- OR Airflow Requirements
- Radiology Waiting Rooms

*Society of Heating, Refrigerating, and Air Conditioning Engineers

Surgical Classifications

- Classifications of surgeries
  - **Class A**: Provides minor surgical procedures performed under topical, local, or regional anesthesia without preoperative sedation. Excluded are intravenous, spinal, and epidural procedures which are Class B or C surgeries.
  - **Class B**: Provides minor and major surgical procedures performed in conjunction with oral, parenteral, or intravenous sedation or performed under analgesic or dissociative drugs.
  - **Class C**: Provides major surgical procedures that require general or regional block anesthesia and/or support of vital bodily functions.
OR Airflow Requirements

- Average velocity shall be 25 to 35 cfm/ft
- Supply diffusers need to be concentrated over the patient and surgical team (70%).
- 20 Air exchanges/hour for class B and C ORs
- 15 Air exchanges/ hour for class A ORs
- Relative humidity range of 20-60%
- Unidirectional, downward

Radiology Waiting Rooms

- Negative pressure, All room air exhausted directly to outdoors, Minimum 12 ach.

This requirement applies only to Radiology waiting rooms programmed to hold patients who are waiting for chest x-rays for diagnosis of respiratory disease

Healthcare Maintenance/Facilities Staff

- How do you get compliance with infection control requirements?
  - Education, Education, Education
  - Standardize procedures
  - Make it as easy as possible to comply
Portable Anteroom

Quick Set Up Dust Barrier

Mobile Dust Control Devices
TAKE AWAY THOUGHTS

• Everyone has a role.
• The process only works through a team approach with good communication.
• The expectation is that all projects will be developed and evaluated in the same manner.

QUESTIONS?

Thank You!