



“Planning Party”

UPCOMING CONSTRUCTION
(ICRA)

PRESENTER – CHRISTA MARDAUS

ICRA COORDINATOR

CARPENTERS TRAINING INSTITUTE

Team Focus



Having a well-constructed multidisciplinary team is instrumental to the success of the job. Team focus regarding the patient care environment including occupancy, noise levels, disruption or vibration, dust control is critical. Process improvement followed with good communication is essential. Understanding the Infection Control Risk Assessment among all staff and construction professionals promotes safe work practices. With this process it helps to promote consistency and ensure understanding of these procedures. Working to best protect your patients, staff, and the construction worker.

Discussion

- Explain the functions of the Infection Control Risk Assessment (ICRA) team.
- Identify the important information relating to the ICRA permit, Safety Risk Assessment (SRA) and Risk Mitigation strategies (ICRMR).
- Describe the Interim Life Safety Measures (ILSM) plan, including mobilization.

WHY

CMS Condition of Participation

Hospital Infection Control Worksheet

Cite: 42 CFR 482.42(a)

1.A.6 The hospital has infection control policies and procedures relevant to construction, renovation, maintenance, demolition and repair, including the requirement for an infection control risk assessment (ICRA) to define the scope of the project and need for barrier measures before a project gets underway.

WHY

IMPACTS

- COST
- QUALITY
- SATISFACTION



- NOSOCOMIAL INFECTION

Thank You all for coming to the project kick-off meeting.



Does it require Infection Prevention measures?



As project manager I've decided to not tell you the purpose of the project. That way it will be harder for you to sabotage it.



Good Lord, NO we've been doing it this way as long as I've been here



Team Approach

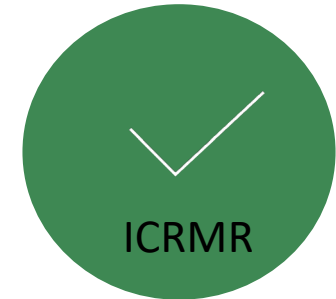


MULTIDISCIPLINARY
TEAM



SRA

- Engineering Group – Building maintenance, utilities, patient care environment, Life Safety Codes
- Infection Prevention – Patient care, acuity level, safety and monitoring
- Contractor Group – Scope of work, project management



ICRMR



ICRA

Ensure Competency

Infection Control Construction Permit			
Location of Construction:		Permit No:	
Project Coordinator:		Project Start Date:	
Contractor Performing Work:		Estimated Duration:	
Supervisor:		Permit Expiration Date:	
		Telephone:	
YES	NO	CONSTRUCTION ACTIVITY	INFECTION CONTROL RISK GROUP
		TYPE A: Inspection, non-invasive activity	GROUP 1: Low Risk
		TYPE B: Small scale, short duration, moderate to high levels	GROUP 2: Medium Risk
		TYPE C: Activity generates moderate to high levels of dust, requires more than one work shift to complete	GROUP 3: Medium/High Risk
		TYPE D: Major duration and construction activities requiring consecutive work shifts	GROUP 4: Highest Risk
CLASS I		1. Execute work using methods to minimize raising dust from construction operations.	2. Immediately replace any ceiling tile displaced for visual inspection. 3. Minor demolition for remodeling
CLASS II		1. Provides active means to prevent air-borne 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. Wipe surfaces with disinfectant.	6. Contain construction waste in tightly covered containers before transport. 7. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area. 8. Place dust mats at entrances and exits to work area. 9. Isolate HVAC system in areas where work is being performed; restore when work completed.
CLASS III	Date	1. Obtain infection control permit before construction begins. 2. To prevent contamination of the duct system, isolate HVAC system in area where work is being done. 3. Complete all critical barriers or implement control cube method before construction begins.	6. Vacuum work with HEPA-filtered vacuums. 7. Wet mop with disinfectant 8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 9. Contain construction waste in tightly covered containers before transport.
	Initial	4. Maintain negative air pressure within work site utilizing HEPA-equipped air filtration units. 5. Do not remove barriers from work area until complete project is thoroughly cleaned by Environmental Services Department.	10. Cover transport receptacles or carts. Tape covering. 11. Upon completion, restore HVAC system where work was performed.
CLASS IV	Date	1. Obtain infection control permit before construction begins. 2. To prevent contamination of the duct system, isolate HVAC system in area where work is being done. 3. Complete all critical barriers or implement control cube method before construction begins.	7. All personnel entering work site are required to wear shoe covers. 8. Do not remove barriers from work area until completed project is thoroughly cleaned by the Environmental Service Department. 9. Vacuum work area with HEPA-filtered vacuums. 10. Wet mop with disinfectant.
	Initial	4. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. 5. Seal holes, pipes, conduits, and punctures appropriately. 6. Construct anteroom. Require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving worksite or they can wear cloth or paper coveralls that are removed each time they leave the work site.	11. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 12. Contain construction waste in tightly covered containers before transport. 13. Cover transport receptacles or carts. Tape covering. 14. Upon completion, restore HVAC system where work was performed.
Additional Requirements:			
Date:	Initials:	Date:	Initials: Exceptions/Additions to this permit are noted by attached memoranda
Permit Request By:		Permit Authorized By:	
Date:		Date:	

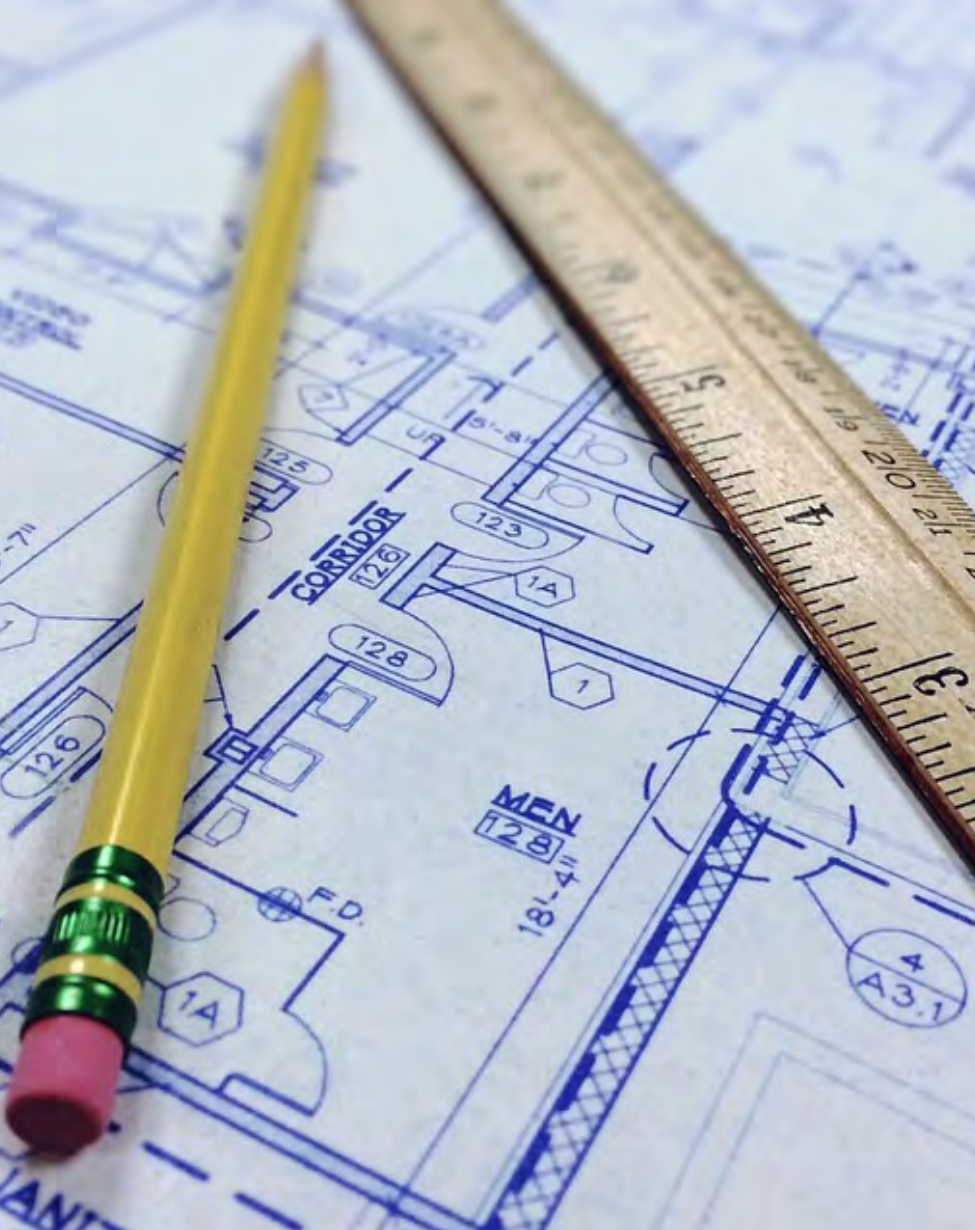
Infection Control Risk Assessment (ICRA) team

- This group identifies the precautions necessary to isolate the work area and protect patients
- ✓ Study the scope of the work, internal and external
- ✓ Evaluate the risk factors and potential hazards
- ✓ Minimize transmission of airborne and waterborne contaminants during construction
- ✓ Document information related to patient care risk within the work area, (ICRA) form

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CLASS II		1. Provides active means to prevent air-borne 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. Wipe surfaces with disinfectant.	6. Contain construction waste in tightly covered containers before transport. 7. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area. 8. Place dust mats at entrances and exits to work area. 9. Isolate HVAC system in areas where work is being performed; restore when work completed.
CLASS III	Date Initial	1. Obtain infection control permit before construction begins. 2. To prevent contamination of the duct system, isolate HVAC system in area where work is being done. 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within work site utilizing HEPA-equipped air filtration units. 5. Do not remove barriers from work area until complete project is thoroughly cleaned by Environmental Services Department.	6. Vacuum work with HEPA-filtered vacuums. 7. Wet mop with disinfectant 8. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 9. Contain construction waste in tightly covered containers before transport. 10. Cover transport receptacles or carts. Tape covering. 11. Upon completion, restore HVAC system where work was performed.
CLASS IV	Date Initial	1. Obtain infection control permit before construction begins. 2. To prevent contamination of the duct system, isolate HVAC system in area where work is being done. 3. Complete all critical barriers or implement control cube method before construction begins. 4. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. 5. Seal holes, pipes, conduits, and punctures appropriately. 6. Construct anteroom. Require all personnel to pass through this room so they can be vacuumed using a HEPA vacuum cleaner before leaving worksite or they can wear cloth or paper coveralls that are removed each time they leave the work site.	7. All personnel entering work site are required to wear shoe covers. 8. Do not remove barriers from work area until completed project is thoroughly cleaned by the Environmental Service Department. 9. Vacuum work area with HEPA-filtered vacuums. 10. Wet mop with disinfectant. 11. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. 12. Contain construction waste in tightly covered containers before transport. 13. Cover transport receptacles or carts. Tape covering. 14. Upon completion, restore HVAC system where work was performed.
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Infection Control Risk Assessment (ICRA) team

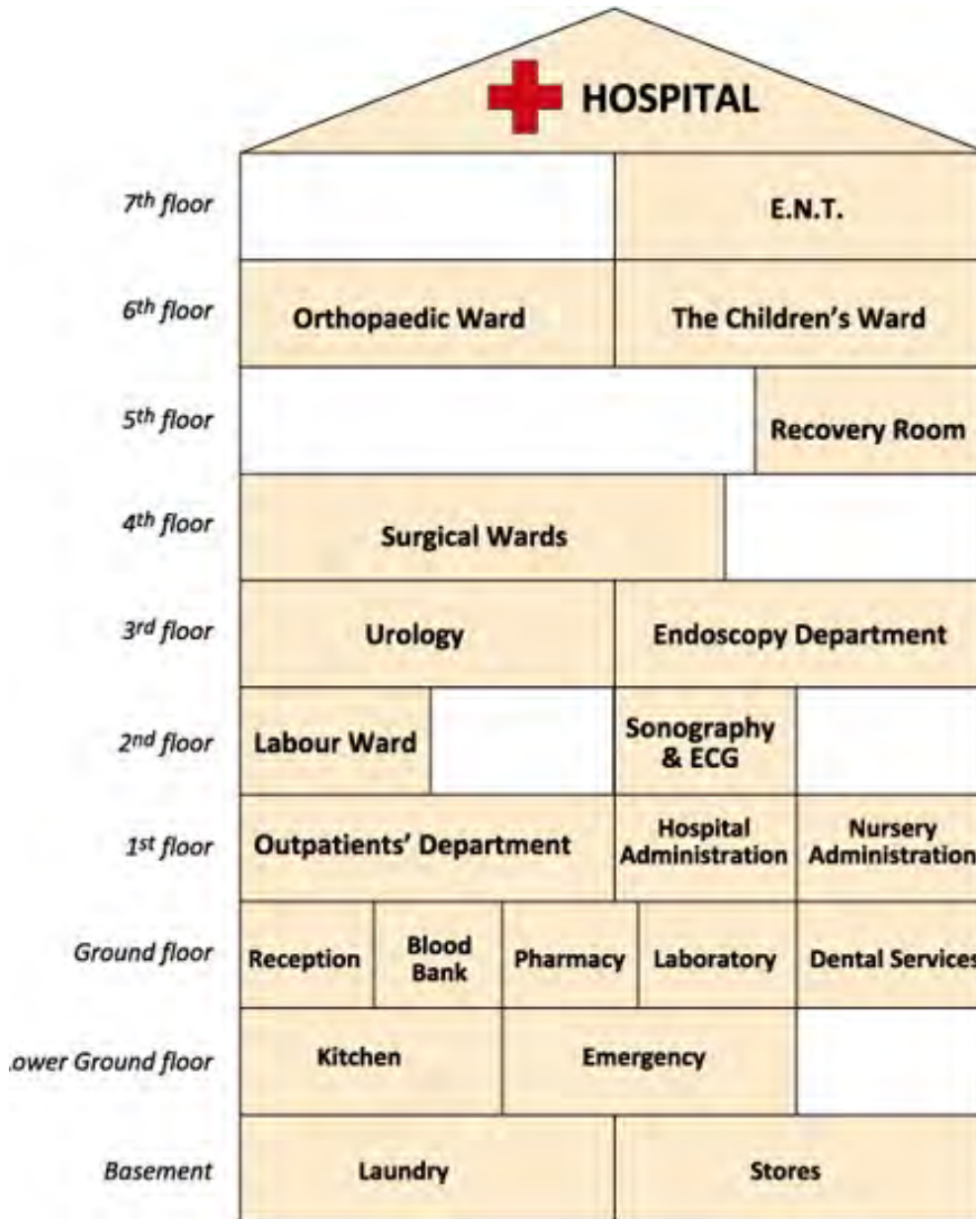
- The ICRA team may consists of a multidisciplinary group from varies departments:
- ✓ Infection control
- ✓ Administration
- ✓ Architects
- ✓ Facility mangers
- ✓ Safety officers, Security managers
- ✓ Directors of specialized departments
- ✓ Environmental services
- ✓ Interim Life Safety Measure team, etc...



Documentation

Project Type

- **Type A** – inspection and noninvasive activities
- **Type B** – small scale, short duration activities that create minimal dust
- **Type C** – work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies
- **Type D** – major demolition and construction projects



Documentation

Patient Risk Group

- Low Risk – office space
- Medium Risk – respiratory therapy, physical therapy, endoscopy, etc.
- High Risk – Coronary care, E.D., laboratories, surgical units, etc.
- Highest Risk – any area caring for immuno-compromised patients

Description of Required Infection Control Precautions by Class		
	During Construction Project	Upon Completion of Project
CLASS I	<ol style="list-style-type: none"> Execute work by methods that minimize raising dust from construction operations. Immediately replace a ceiling tile displaced for visual inspection 	<ol style="list-style-type: none"> Clean work area upon completion of task.
CLASS II	<ol style="list-style-type: none"> Provide active means to prevent airborne dust from dispersing into atmosphere. Water mist work surfaces to control dust while cutting. Seal unused doors with tape. Block off and seal air vents. Place dust mats at entrances and exits of work areas. Remove or isolate HVAC system in areas where work is being performed. 	<ol style="list-style-type: none"> Wipe work surfaces with disinfectant. Contain construction waste in tightly covered containers before transport. Wet mop and/or vacuum with HEPA-filtered vacuum before leaving work area. Upon completion, restore HVAC system where work was performed.
CLASS III	<ol style="list-style-type: none"> Remove or isolate HVAC system in area where work is being done, to prevent contamination of duct system. Complete all critical barriers—i.e., drywall, plywood, plastic—to seal area from non-work area before construction begins. Or, implement control cube method with HEPA-filtered vacuum for vacuuming prior to exit. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. Contain construction waste in tightly covered containers before transport. Cover transport receptacles or carts. Tape down covering unless cart has a solid lid. 	<ol style="list-style-type: none"> 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. Remove barrier materials carefully to minimize spreading of dirt and debris associated with construction. Vacuum work area with HEPA-filtered vacuum. Wet mop area with disinfectant. Upon completion, restore HVAC system where work was performed.
CLASS IV	<ol style="list-style-type: none"> Isolate HVAC system in area where work is being done, to prevent contamination of duct system. Complete all critical barriers—i.e., drywall, plywood, plastic—to seal area from non-work area before construction begins. Or, implement portable cube method with HEPA-filtered vacuum for vacuuming prior to exit. Maintain negative air pressure within worksite utilizing HEPA-equipped air filtration units. Seal holes, pipes, conduits, and punctures. Construct anteroom. Require all personnel to pass through anteroom so they can be vacuumed using a HEPA-filtered vacuum cleaner before leaving worksite. Or, require all personnel to wear cloth or paper coveralls that are removed each time they leave the worksite. All personnel entering worksite are required to wear shoe covers. Shoe covers must be changed each time the worker exits the work area. 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. 	<ol style="list-style-type: none"> Remove barrier material carefully to minimize spreading of dirt and debris associated with construction. Contain construction waste in tightly covered containers before transport. Cover transport receptacles or carts. Tape down covering unless cart has a solid lid. Vacuum work area with HEPA-filtered vacuum. Wet mop area with disinfectant. Upon completion, restore HVAC system where work was performed.

Documentation

TABLE 3

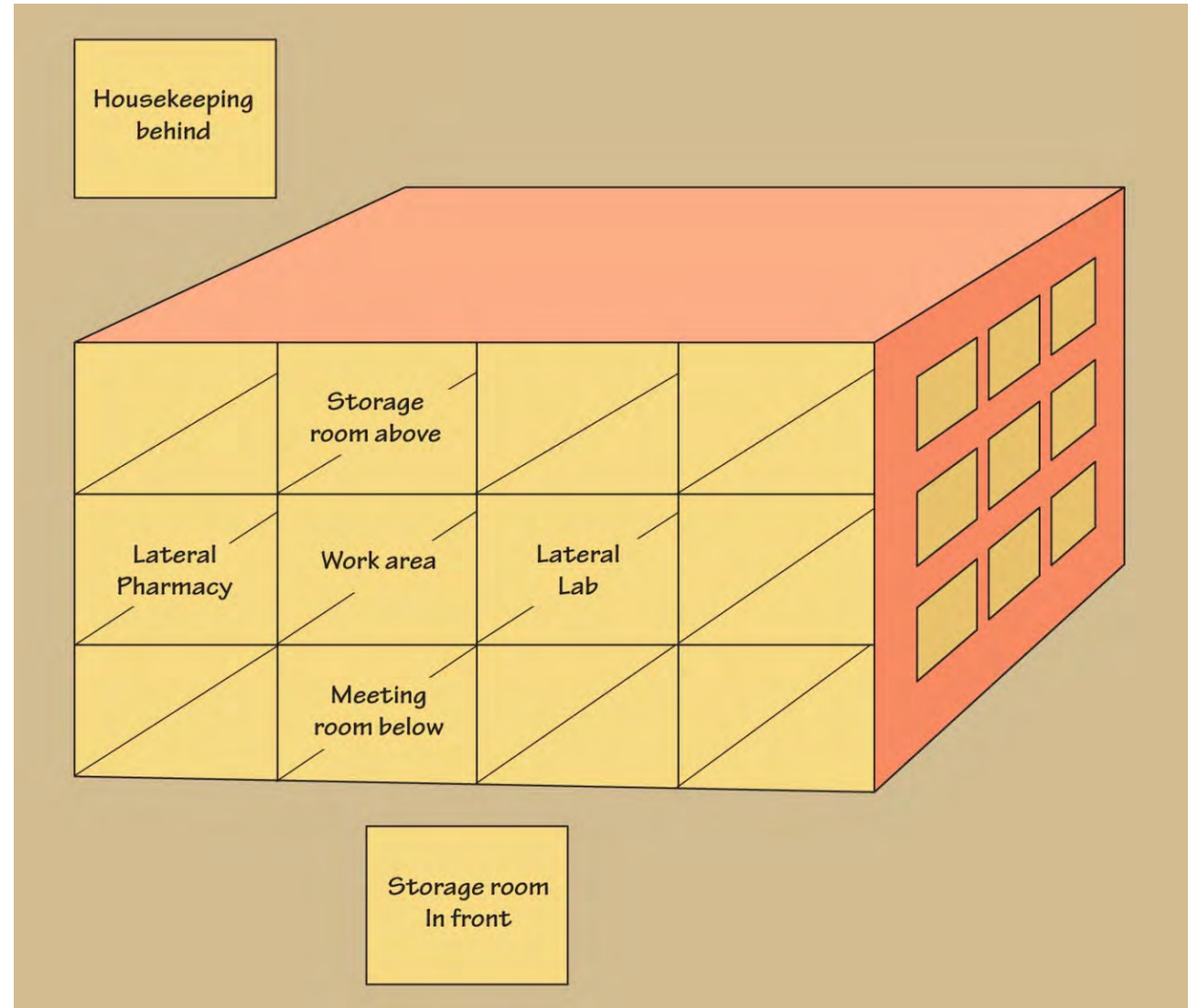
Step 3 of the ICRA form

Patient Risk Group	Construction Project Type			
	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.

Additional Steps

- Step 4 Surrounding Project Area** – potential impact to room surrounding
- Step 5 Identify Specific Site** – project is recorded in
- Step 6 Related Issues** – all issues related to the mechanical systems
- Step 7 Containment Measures** – need for containment and whether it needs to be a hard or soft wall



Additional Steps

- Step 8 Potential Risk of Water Damage** – possible risk of compromising the structural integrity
- Step 9 Work Hours** – actual time the work will be conducted
- Step 10 – 13 Facility design** – building codes and regulatory areas
- Step 14 Placement of Containment** – barrier to be used and the placement to be recorded



Partnering Documents



SAFETY RISK ASSESSMENT
(SRA)



INFECTION CONTROL RISK
ASSESSMENT (ICRA)



INFECTION CONTROL RISK
MITIGATION (ICRMR)

Planning Elements

- Special HVAC needs or requirements
- Water management program
- Location of known hazards
- Assessment of external and internal construction activities
- Minimum hand hygiene and first aid equipment
- Number, location, type of airborne isolation protective environment rooms
- Selection materials for surfaces and furnishings

Hazards in Healthcare Construction

Biohazards – medical waste generated by medical procedures, Sharps containers, bodily fluids, and tissue

Chemicals – bonding agents, solvents, cleaning agents, adhesives, and different finished materials



Guidelines – FGI 2014



Infection Control Risk Mitigation

Plans that describe the specific method by which transmission of contaminants will be avoided during maintenance, renovation, construction and commissioning

Guidelines – FGI 2014



Infection Control Risk Mitigation

Written plans that include the following:

- Patient placement
- Standards for barriers
- Construction including plumbing systems, water related equipment (ice machines, sterilizers), HVAC
- Staff training
- Bathrooms and break areas for construction staff
- Commissioning
- Occupancy



TRAINING

Our facility staff walking past an improper dust containment unknowingly?

~Surveyor

Construction teams should understand that working on a healthcare construction project is unique from working on a non-occupied construction site. It is essential that construction workers understand the importance of following policies and procedures that are required.

- Healthcare (unique environment)
- ICRA process
- ILSM
- Worksite containment
- Dust mitigation
- Transport of construction material and debris

Disaster Plans for Emergencies

Written plans that include the following:

- HVAC shutdown
- Water outage
 - Location of supplies
 - Who is responsible
 - Chain of command
- Water leak
 - Location of supplies
 - Who is responsible
 - Chain of command

(What if....)

- Emergency room – 2015 sprinkler head break
- 9 of 19 rooms affected
- Patients had to be diverted to area hospitals
- Average 15-40 GPM



Recommendations

Monitoring

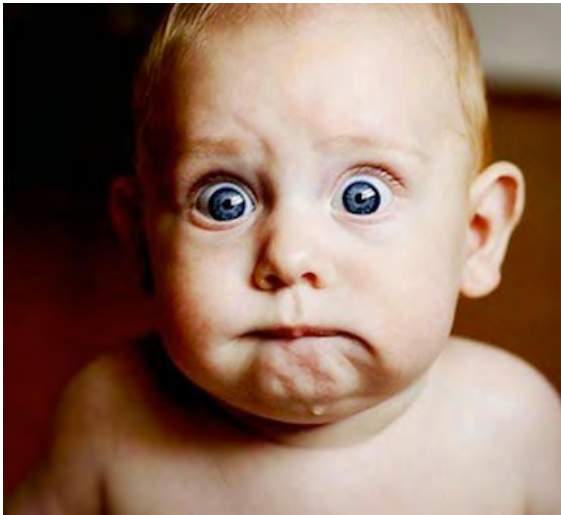
- Written procedures for suspension of work
- Rounding construction sites nights and weekends
- Assigned responsibility for monitoring compliance

Enforcement

- Consider contractual penalties for not complying with ICRA requirements

(What if....)

- New facility manager
- New I.P.
- First walk-thru with the surveyor



Revealed 200 buckets placed above ceiling to help prevent water damage.

Interim Life Safety Measures

Team responsibilities are to identify fire safety and security measures to ensure the safety of patients or residence to minimize injury or damage in the event of fire or other threat. Understanding designated routes and evacuation routes of the building.

- **Exits**
 - Unobstructed egress through construction
 - Alternate exits are identified
 - Inspections
- **Fire Equipment and Safety**
 - Fire Alarms, Detention, and Suppression Systems (Operational)
 - Power is properly secured
 - Good Housekeeping in construction areas (non-combustibles, fire load concerns)
- **Surveillance and Infection Prevention Safety**
 - Proper identification
 - Lockout/tagout

(What if....)

- Fire hydrant malfunction near main entrance
- Water flooded 1/3 of the 1st floor
- Lab and emergency department affected
- 3 days out of commission
- Services rerouted



Interim Life Safety Measures

DAILY MONITORING ILSM

Daily Monitoring: ILSM — ICRA			
	Yes	No	NA
25. Materials used (i.e., fire retardants) comply with necessary safety regulations.			
26. Construction barriers maintain negative pressure relationships.			
27. Workers demonstrate compliance with traffic patterns.			
28. Workers comply with use of PPE (hard hats, eye protection, etc.) as needed.			
29. HEPA filtration units, HEPA vacuum equipment, and/or continuous use of exhaust fans demonstrate they are functioning appropriately.			
30. Exhaust ducts sealed/capped as agreed by ICRA.			
31. Construction area doors are closed and gaskets and hardware are intact.			
32. Construction carts transporting debris are covered and consistent with agreement designed to minimize airborne particulate matter from debris.			
33. All windows and doors remain closed to prevent circulation of dust/debris.			
34. Walk-off mats, adhesive strips are clean and changed sufficiently, or construction exit cleaned sufficiently to maintain clean entry/exits.			
35. No signs of water leakage or pests.			
36. Ceiling tiles are replaced when space not being accessed.			

Additional comments _____

Project Manager _____

Contractor _____

Sent to Safety &/or IC Committee _____

Daily Monitoring: ILSM — ICRA			
	Yes	No	NA
12. There has been a minimum of two fire drills conducted per shift per quarter.			
13. Number of hazard surveillance inspections in construction area has increased.			Last
14. Safety education programs have been conducted to ensure awareness of any ILS Safety Code deficiencies and construction hazards.			Date
C. HAZARD SURVEILLANCE and INFECTION PREVENTIO			
15. Power is properly secured at the end of each workday.			
16. Hand and safety rails are in place and in good condition.			
17. Extension cords are grounded and in good condition.			
18. Power tools are in good condition.			
19. Workers are wearing required identification and hard hats are used as required.			
20. Cutting and welding operations are properly and safely conducted and have appropriate hot work permits.			
21. Documentation of worker instruction in Right-to-Know, Infection Control, and Fall Hazards is available if requested.			Date
22. All scaffolding complies with OSHA requirements (1926.451).			
23. Construction site is secure and properly isolated from fresh air intakes.			
24. Lock out/tag out procedures are used as appropriate			

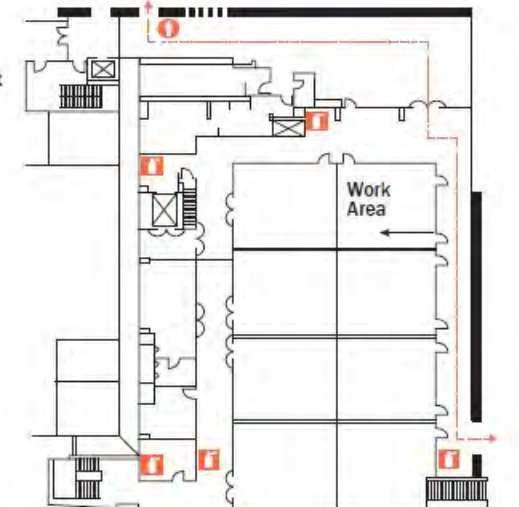
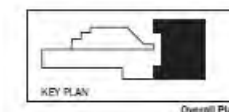
Daily Monitoring: ILSM — ICRA Precautions				
Date of assessment/survey:	Assessment completed by:			
Area assessed/surveyed:	Date distributed to safety/IC:			
Project no.:	Project name:			
	Yes	No	NA	List time, documentation, or action/ follow-up as needed
A. EXITS				
1. Exits provide free and unobstructed egress through construction.				
2. Alternative exits are clearly identified.				
3. Means of egress in construction area inspected daily.				
4. Free and unobstructed access to ED/ Services and for emergency forces.				
B. FIRE EQUIPMENT AND SAFETY				
5. Fire alarms, detection, and suppression systems are in an operational function.				
6. Fire alarms, detection, and suppression systems are not impaired.				
7. Temporary fire alarm, detection, and suppression systems have been inspected and tested monthly.				Date:
8. Training and additional fire equipment have been provided for personnel.				
9. Power has been properly secured at the end of each workday.				
10. No smoking policy has been implemented in and adjacent to the construction areas.				
11. Construction areas are free of storage and housekeeping materials, food waste, and debris from daily operations to reduce flammable and combustible fire load of the building; floor area leading to/from construction site cleaned daily.				Date or time:

ILSM ROUTING PLAN

ILSM Routing Plan

ILSM Routing
In Case of Fire - Dial 911
In Case of Fire Use Stairs for Exit
Do Not Use Elevators

- You Are Here
- Fire Alarm Pull Box
- Fire Extinguisher
- Routing Path
- Elevator
- Exit Stair
- Alarm Sounds Like: (Buzz)
- Alarm Looks Like: (Flashing Light)



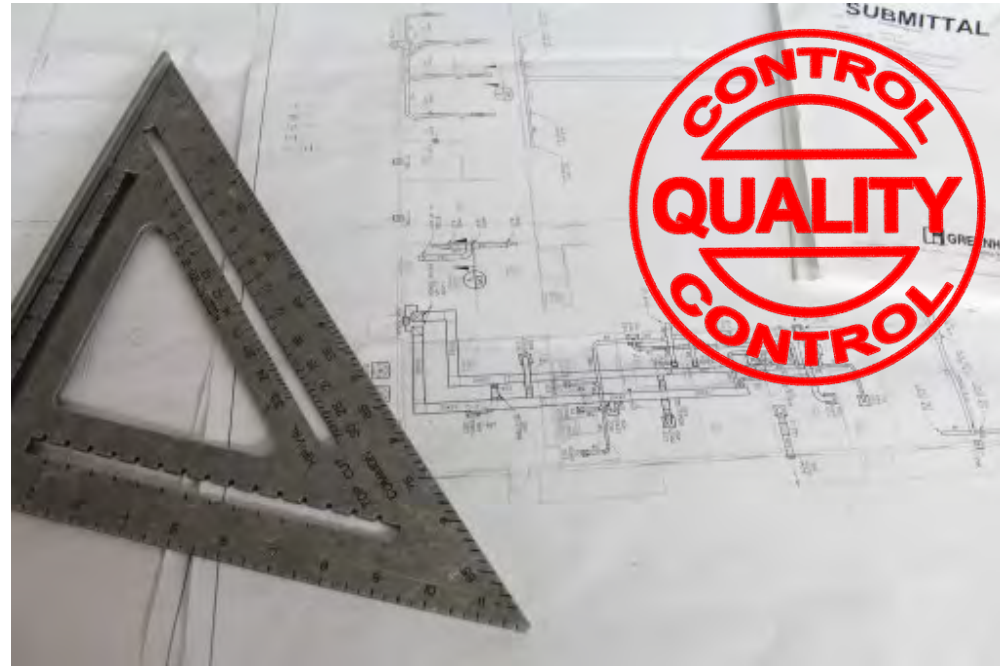
Onsite Orientation

This may include:

- Onsite safety training through the facility or contractor group.
- Infection Prevention team approach with contractors.
- Contractor driven pre-task meetings in the morning.
- Toolbox talks given specifically related to healthcare sites.
- Required certificate of training (Healthcare Construction)



The real strategy to the
project is the TEAM!





Wrap Up

- The Facility Guidelines Institute (Hospitals and Outpatient Facilities) 2014 edition
- Infection Control Risk Assessment (ICRA): Construction Trades Best Practices Awareness Training, Carpenters International Training Fund
- APIC (Infection Prevention Manual for Construction & Renovation)



Reference Material



The health and safety of every patient, facility employee, and construction worker is our **NUMBER ONE PRIORITY**

Thank you

QUESTIONS?

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