

ATLB-1260: ICRA FOR LABORERS

Cuyahoga Community College

Viewing: ATLB-1260 : ICRA for Laborers

Board of Trustees:

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Academic Term:

Fall 2021

Subject Code

ATLB - AIT-Construct/Hazard Material

Course Number:

1260

Title:

ICRA for Laborers

Catalog Description:

Certification course explaining infection control risk management ICRA that identifies worker hazards, controls and disease transmission, patient risk groups and related hazards resulting from construction and renovation in hospitals and health care facilities. In addition, the fabrication of containment barriers and installation and monitoring of negative air equipment are covered.

Credit Hour(s):

2

Lecture Hour(s):

2

Requisites

Prerequisite and Corequisite

Enrolled in the Laborers LIUNA apprenticeship program and/or a member in good standing of the Ohio Laborers Union.

Outcomes

Course Outcome(s):

I. Describe Infection Control Risk Assessment (ICRA) and discuss the purpose for worker awareness including hazard identification, controls, and disease transmission.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. List and define the terms related to ICRA.
2. Identify the purpose of ICRA training for the worker with regards to health hazards related to patient care facilities.
3. List and explain the possible health hazards affecting workers, patients, and visitors resulting from construction and renovations in hospitals and health care facilities.
4. Discuss the transmission of infectious pathogens through mechanical systems and dedicated biological waste drains.
5. Explain how pathogen migration can be controlled using various measures and equipment.
6. Differentiate between health care facility renovation and typical construction worksites.
7. Identify specialty personal protective equipment required for construction work within health care facilities.

Course Outcome(s):

II. Discuss the different patient risk groups. Identify the related hazards and describe and construct barriers and critical barriers required to control pathogen infiltration into patient areas.

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. List and explain the different patient risk groups and identify dust creating tasks.
2. List dust controls and explain methods employed to minimize infiltration.
3. Explain the purpose of proper signage outside of the workplace entry and describe the respective placement of each used to restrict non-worker entry.
4. List and describe critical barriers and discuss potential risks of dust infiltration.
5. List the methods used to transport materials and equipment and describe the various barriers required at doors and windows.

Course Outcome(s):

III. Demonstrate the ability to fabricate and install barriers including job built and pre manufactured containments and install and monitor negative air machines during work operations

Essential Learning Outcome Mapping:

Critical/Creative Thinking: Analyze, evaluate, and synthesize information in order to consider problems/ideas and transform them in innovative or imaginative ways.

Objective(s):

1. Demonstrate the ability to construct barriers and critical barriers using tools, equipment and special dust controls.
2. Select and assemble pre-manufactured containments used for establishing "anti-rooms" and mobile containment cubes used for ceiling penetrations.
3. Maintain work area air pressure to establish negative air pressure.
4. Set up and position the negative air pressure machine and filter and exhaust work space air to designated areas.
5. Select and install the respective filters into the negative air machine.
6. Differentiate between the respective air filters.
7. Monitor and record air readings using portable and stationary particle counter with respect to the ICRA plan.
8. Position manometer, including sensor tube to continuously monitor for barrier breaches.
9. Measure and record the work space air pressure using a manometer.
10. Conduct inspections of barrier installation, negative air machine set up, and air monitoring devices prior to commencement of work operations.

Methods of Evaluation:

1. Quizzes
2. Tests
3. Class participation

Course Content Outline:

1. ICRA: purpose, hazards, and controls
 - a. Terminology
 - i. ICRA
 - ii. Air changes per hour ACH
 - iii. Anemometer
 - iv. Anteroom
 - v. Biohazard
 - vi. C. diff
 - vii. Cubic feet per minute CFM
 - viii. High efficiency particulate air HEPA
 - ix. Heating ventilation and air conditioners HVAC
 - x. Manometer
 - xi. Micron
 - xii. Mil
 - xiii. Magnetic resonance imaging MRI
 - xiv. Nosocomial
 - xv. Opportunistic infection

- xvi. Intumescent
- xvii. Chase
- xviii. Immune compromise
- b. ICRA: patient hazards
 - i. Purpose
 - 1. Infection control
 - a. Housekeeping
 - b. Dust control
 - 2. Facility disruption
 - a. Patient
 - b. General public
 - ii. Hazards
 - 1. Hospital acquired infection
 - 2. Mold
 - 3. Viruses
 - 4. Fumes
 - 5. Vapors
 - 6. Noise
 - 7. Vibration
- c. Health hazards
 - i. Legionnaires disease
 - ii. HIV/AIDS
 - iii. Tuberculosis
 - iv. Hepatitis
 - v. Fungal infections
 - vi. Pneumonia
 - vii. Common cold
 - viii. Viral infections
- d. Infectious pathogen transmission
 - i. Mechanical systems
 - 1. Duct work
 - a. Supply
 - b. Return
 - 2. Exhaust systems
 - 3. Water supply
 - a. Stagnation-water
 - b. Microbe infestation
 - 4. Common waste drain
 - a. Leaks
 - b. Blockage
 - ii. Biological and chemical waste drain
 - 1. Leaks
 - 2. Damage/breakage
- e. Pathogen migration control
 - i. Measures
 - 1. Barriers
 - a. Visquine
 - b. Ridged
 - c. Mobile containment cube
 - d. Ante rooms
 - e. Ceiling critical
 - 2. HVAC lock-out
 - 3. Housekeeping
 - 4. Negative air pressure control
 - 5. Routes of entry control
 - ii. Materials
 - 1. Tape
 - 2. Adhesives
 - 3. Disinfectants

4. Fire resistant plastic
5. Drywall
6. Plywood
7. Lumber
- iii. Equipment
 1. Negative air machines
 2. Anemometer
 3. Monometer
 4. HEPA vacuum
 5. Filter fabric
 6. Particle counter
 7. Charcoal filter
 8. Sticky mat
 9. Water spray bottle
 10. Flexible vent hose
 11. Trash gondola
 12. Dryer mop
 13. Sweeping compound
 14. Broom, dust pan, shovel
 15. Wet mop and bucket
- f. Health care facility renovation vs. general construction
 - i. General construction
 1. Work times
 2. Personal
 - a. Supervisor
 - b. Various trades
 3. Standard safety practices
 - ii. Health care facility renovation
 1. Personal
 - a. Trade workers
 - b. Medical staff
 - c. Patients
 - d. General visitors
 - e. Administrative staff
 2. Hours of operation
 3. General construction practices
 - iii. Restrictions
 1. Behavior
 2. Worker attire
 3. Products
 - a. Cleaner
 - b. Solvents
 - c. Low volatile organic compound (VOC)
 4. Noise
 5. Barriers
 6. Entry/exit locations
 7. Stair/elevator use
 8. Worker break areas
 9. Interim life saving measures
 - a. Fire suppression
 - b. Alarms
- g. Specialty PPE
 - i. Respirator
 - ii. Chemical resistant gloves
 - iii. Face shield
 - iv. Disposable items
 1. Tyvek suit
 2. Boot cover

3. Latex gloves
4. Hair net
5. Dust mask
2. Risk groups, controls and barrier construction
 - a. Patient risk groups
 - i. Low risk
 1. Administrative personnel
 2. Care givers
 3. Visitors
 - ii. Medium risk
 1. Cardiology department
 2. ECHO cardiology
 3. Endoscopy
 4. Nuclear medicine physical therapy
 5. Radiology
 6. Respiratory therapy
 - iii. High risk
 1. Critical care unit
 2. Emergency room
 3. Labor and delivery
 4. Laboratories
 5. Newborn nurseries
 6. Outpatient surgery
 7. Pharmacy
 8. Surgical units
 9. Post-operative recovery
 - iv. Highest risk
 1. Immune compromised patient areas
 2. Burn unit
 3. Cardiac catheter areas
 4. Central sterile supply
 5. Intensive care units
 6. Negative pressure isolation rooms
 7. Oncology department
 8. Operating rooms
 - b. Dust controls and methods
 - i. Dust controls
 1. Water spray bottles
 2. Sticky mats
 3. Spray adhesives
 4. Duct tape
 5. High Efficiency Particulate Air HEPA
 - ii. Methods
 1. Temporary barriers
 2. Negative air
 3. Task performance
 4. Engineering controls
 5. Tools
 6. Equipment
 - c. Signage
 - i. Purpose
 1. Entry control
 2. Walkway sustainability
 3. Worker restriction
 - ii. Placement
 1. Entry
 2. Exits
 3. Restricted areas
 - d. Critical barriers

- i. Types
 - 1. Air vents
 - 2. Doorways
 - 3. Windows
 - 4. Penetrations
- ii. Risk control
 - 1. Patient location
 - 2. Hospital acquired infections
- e. Material and equipment transport
 - i. Cover
 - ii. Seal
 - iii. Cleaned
- f. Barrier construction
 - i. Work area assessment
 - ii. Work procedures
 - 1. Door treatment
 - 2. Critical vent barriers
 - 3. Penetrations
 - iii. Tools and materials
 - iv. Rigid barrier construction
 - v. Plastic sheeting
- 3. Containment fabrications
 - a. Job built containments
 - i. Building materials
 - 1. Wall studs
 - 2. Wall treatment
 - a. Drywall
 - b. Plywood
 - ii. Plastic sheeting barriers
 - b. Pre-manufactured containment
 - i. Mobile containment cube
 - 1. Penetrations
 - a. Wall
 - b. Ceiling
 - 2. Anti-room
 - a. Clean room
 - b. Air lock
 - ii. Modular panel system
 - 1. Rigid barriers
 - 2. Snap together assembly
 - c. Work area/negative air
 - i. Protection
 - 1. Patient
 - 2. Employees
 - 3. Visitors
 - ii. Pathogen migration control
 - iii. Specialized equipment
 - d. Negative air pressure machine
 - i. Set-up
 - 1. Positioning
 - a. Entry to work area
 - b. Exhaust
 - c. Primary dust areas
 - 2. Work space air volume
 - ii. Start-up
 - 1. Filter selection
 - 2. Filter installation
 - 3. Exhaust duct work
 - iii. Maintenance
 - e. Filters

- i. Pre-filter
 - 1. Large particles
 - 2. Frequent maintenance
- ii. Intermediate filter
 - 1. Pleated
 - 2. Change out schedule
- iii. HEPA
 - 1. Infrequent change
 - 2. Efficiency
 - a. 99.97%
 - b. Micron capture: 0.3 microns
 - 3. Seals and gaskets
- f. Air monitoring
 - i. ICRA plan
 - 1. Work area requirements
 - 2. Specific air pressure
 - ii. Devices
 - 1. Manometer
 - 2. Particle counter
 - iii. Record keeping
 - 1. Per ICRA plan
 - 2. Continuous
 - 3. Periodic
- g. Device positioning
 - i. Work area with reference
 - ii. Sensor tube limits
- h. Commencement of work operation
 - i. Define work area
 - ii. Inspections
 - 1. Barriers
 - 2. Critical barriers
 - 3. Negative air machine set-up
 - 4. Monitor placement and operation

Resources

LIUNA Training and Education Fund. *ICRA For Occupied Facilities*. Current. Pomfret Center, CT; LIUNA Training and Education Fund, 2013.

Carpenters International Training Fund. *Best Practices in Health Care Construction in Occupied Facilities*. Current. Las Vegas, Nevada; Carpenters International Training Fund, 2008.

Resources Other

- 1. OSHA.gov
- 2. SMOHIT.gov
- 3. <https://www.cpwr.com/training/infection-control-risk>
- 4. <https://www.icra.in>

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