



HOMES AND SENIORS SERVICES

POLICY & PROCEDURE NUMBER: IC 7.3

DEPARTMENT: *Infection Control*

SUBJECT: *Guidelines for Construction & Renovations*

APPROVAL DATE: April 2004

REVISION DATE: March 2016

REVIEW DATE: March 2017; Nov 2018

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BACKGROUND:

Construction and renovation projects in facilities pose a threat to residents and may also be a health risk to staff and visitors. Health care-associated infections (HAIs) have been attributed to construction, renovation, maintenance of health care facilities. Examples of HAIs associated with construction, renovation, maintenance and design (CRMD) are Legionnaires' disease and invasive aspergillosis. Advanced age is a risk factor for HAIs therefore; careful planning is required to ensure that appropriate infection prevention and control measures are utilized throughout the project to reduce these risks.

Dust control, ventilation, plumbing activities, traffic flow debris removal and clean-up are key areas for focus during each phase of CRMD.

PURPOSE:

To prevent infectious disease transmission through the construction, renovation and architectural design of a facility.

Infection prevention and control is important in each phase of the project - planning phase, work phase and the commissioning phase.

Planning Phase

- Develop a project team to include: infection control practitioner, managers of each department, project manager, engineer/maintenance staff, contractors, external resources as required
- Perform infection control risk assessment (ICRA) from the public health Ontario website: www.publichealthontario.ca/CRMD
- Review current guidelines and Ministry requirements to determine IPAC requirements and interpret IPAC guidelines for the team
- Consult with experts as required
- Ensure contractor and workers have IPAC knowledge and education
- Participate in review of schedules, activities and/or CRMD meetings
- Design considerations: population affected; numbers, location and types of airborne isolation and protective environment rooms; location of special ventilation and filtration of HVAC; air-handling and ventilation requirements in areas with special needs; water systems to limit Legionella and other waterborne opportunistic pathogens; number and



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location of hand wash sinks and alcohol based hand rub dispensers and eye-wash stations; clear separation between clean and dirty areas; placement of PPE; impact on residents and employees; determination of the specific hazards; location of residents (susceptibility to infection); impact on residents during planned or unplanned outages, movement of debris, traffic flow, clean-up, testing and certification

- Utilize the following checklists for planning phase from the public health Ontario website: www.publichealthontario.ca/CRMD: Hoarding, infection control risk assessment; managing traffic flow; environmental cleaning of health care facilities; infection control requirements for space in health care facilities; design and planning considerations; infection control practitioner (ICP) responsibility checklist

Work Phase

- ICP to participate in scheduled project meetings with project team
- Tour CRMD area and audit compliance with IPAC measures
- Provide immediate feedback on IPAC gaps or issues to project lead/team
- Reinstruct as necessary
- Ensure signage is clear and directs flow around construction/renovation area
- Ensure distribution of care supplies: clean supplies, equipment, no contact with, or not temporarily stored, near the construction/renovation area
- Egress paths – free of debris
- Construction zone – authorized personnel only
- Construction workers – avoid resident care areas
- Contain debris when transported through facility
- The isolation of occupied areas from the construction area during construction/renovation using sealed, airtight and fire-rated barriers
- Utilize the following checklists for work phase from the public health Ontario website: www.publichealthontario.ca/CRMD: Removing construction debris; infection control practitioner responsibility checklist; hoarding; managing traffic flow; environmental cleaning of health care facilities

Preventive Measures Level 1

- Involve inspection and non-invasive activities
- Contractors/maintenance staff responsible for dust control
- No hoarding required



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Preventive Measures Level 2

Contractors must:

- Block off/seal or isolate HVAC system supply-and-return air ducts into construction area
- Seal all penetrations in the floor, walls, ceilings
- Use drop sheets to control dust
- Use walk-off mats
- Textured, perforated or drop ceilings covered with polyethylene
- Work above false ceiling requires a barrier
- Carpeted or textured floors require polyethylene sheeting
- Entrance doors require a double-flap polyethylene sheeting weighted at bottom

Preventive Measures Level 3 and 4

In addition to measures 1 and 2

- Impermeable dust barriers
- Anteroom constructed at access points
- No air-leakage paths
- Windows and doors sealed
- Continuous polyethylene sheeting wall
- Continuous tape seal: gypsum wallboard to floor and ceiling; polyethylene to floor and ceiling; both sides of polyethylene
- Erecting hoarding walls: dust generated; measure, cut, paint sheets; install temporary enclosure
- Upper seals: two layers of fire-rated rip proof poly (6 mil); installation by asbestos – or mold-remediation contractors; inspection of upper seals; smoke tests performed on seals and hoarding walls; seals checked frequently
- Anterooms: negative air pressure; large enough to accommodate materials entering/exiting construction area; doors located at either end of anteroom; walls resistant to air leakage and washable; anteroom dust barriers extend to ruc ceiling
- Anteroom doors: hollow metal door; door frame and bottom sealed with weather stripping; lockable hardware; door-closure device; bungee cords not acceptable
- Removal of hoarding: contractor responsible for removing all debris and dust; project manager responsible for completing cleaning before contacting ICP for final inspection; hoarding maintained until final inspection completed; short-term protection during removal



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Construction Debris Removal - Environmental Cleaning

ICP, constructor, project manager, and representative from affected area(s) discuss and pre-plan:

- Debris removal route (e.g. avoid resident care areas)
- The use of a dedicated elevator
- Time of day for debris removal (e.g. evening or other times when activity levels are decreased)
- Where debris will be stored until removed from the facility property

Debris is removed:

- In a covered container
- Covered with a moistened sheet, or
- Sent down an external chute (seal chute when not in use)
- Wipe down the exterior of the cart and the wheels with a damp cloth prior to leaving the construction area

Removing debris for constructors:

- Vacuum self with HEPA filter – equipped vacuum
- Remove the protective equipment they have been wearing, or
- Don protective equipment – i.e. clean coveralls so that dust on their clothes is contained

Commissioning Phase

- Used to assess and ensure items are completed before occupancy
- Supports an environment that is safe for all building occupants
- Begins at pre-design stage through post-occupancy and operations phase
- Integral part of the design and construction process
- Intended to be undertaken throughout the life of a facility
- Pre-occupancy – manual wrist blades installed on designated sinks; faucets opened simultaneously to test drain effectiveness; floor drains present and functioning; sinks checked to ensure they are properly located and functioning; surfaces in procedure/service areas are appropriate for use; air balancing completed according to specifications



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- Two weeks prior to occupancy – use processing packs to check steam, gas sterilizers; verify correct water temperatures; determine transportation systems; walk through with local public health unit representative and facility management personnel
 - One week prior to occupancy – evaluation of HVAC that supplies special areas including AIR rooms; evaluate laminar air hoods; aerators checked; contractors completed own cleaning; housekeeping department completed follow –up cleaning and disinfection; hand hygiene products in dispensers; registered pest control and management is functioning and checked
 - Deficiencies: detailed inspections conducted to confirm all checklist items satisfied; once all checklist and deficiency items satisfied, need inspection by ICP
 - Post occupancy : post occupancy evaluation; intensify surveillance for HAIs and monitoring of infection control practice
 - Utilize the following checklists for commissioning phase from the public health Ontario website: www.publichealthontario.ca/CRMD: infection control practitioner responsibility checklist; hoarding; commissioning checklist; environmental cleaning of health care facilities

Reference:

www.publichealthontario.ca/CRMD