## Risk Assessment and Preventive Measures Checklist for Construction and Renovation

<table>
<thead>
<tr>
<th>Location of Construction:</th>
<th>Project Start Date:</th>
<th>Estimated Duration:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Project Manager (PM):</strong></td>
<td>Contractor(s):</td>
<td>Infection Prevention &amp; Control Professional (ICP):</td>
</tr>
<tr>
<td>PM’s phone number:</td>
<td>Contractor’s phone number:</td>
<td>ICP’s phone number:</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Yes</th>
<th>No</th>
<th><strong>Construction Activity (see Part A)</strong></th>
<th>Yes</th>
<th>No</th>
<th><strong>Population Risk Group (see Part B)</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Type A: Inspection, non-invasive activities.</td>
<td></td>
<td></td>
<td>Group 1: Lowest Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type B: Small scale, short duration, minimal dust generating activities.</td>
<td></td>
<td></td>
<td>Group 2: Medium Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type C: Activities that generate moderate to high levels of dust, requires greater than one work shift to complete.</td>
<td></td>
<td></td>
<td>Group 3: Medium to High Risk</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Type D: Activities that generate high levels of dust, major demolition and construction activities requiring consecutive work shifts to complete.</td>
<td></td>
<td></td>
<td>Group 4: Highest Risk</td>
</tr>
</tbody>
</table>

Adapted from Health Canada guideline “Construction-related Nosocomial Infections in Patients in Health Care Facilities” July 2001

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### Part A: Types of Construction Activity

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Type A</strong></td>
<td>Inspection and non-invasive activities. These include, but are not limited to, activities that require removal of ceiling tiles for visual inspection (limited to 1 tile per 50 square feet), painting (but not sanding), wall covering, electrical trim work, minor plumbing (disrupts water supply to a localized patient care area [e.g. 1 room] for less than 15 minutes), and other maintenance activities that do not generate dust or require cutting of walls or access to ceilings other than for visual inspection.</td>
</tr>
<tr>
<td><strong>Type B</strong></td>
<td>Small scale, short duration activities that create minimal dust. These include, but are not limited to, activities that require access to chase spaces, cutting of walls or ceilings where dust migration can be controlled for the installation/repair of minor electrical work, ventilation components, telephone wires or computer cables, and sanding of walls for painting or wall covering to only repair small patches. It also includes plumbing that requires disruption to the water supply of more than one patient care area (e.g. &gt;2 rooms) for less than 30 minutes.</td>
</tr>
<tr>
<td><strong>Type C</strong></td>
<td>Any work that generates a moderate to high level of dust or requires demolition or removal of any fixed building components or assemblies (e.g. counter tops, cupboards, sinks). These include, but are not limited to, activities that require sanding of walls for painting or wall covering, removal of floor coverings, ceiling tiles and casework, new wall construction, minor duct work or electrical work above ceilings, major cabling activities, and any activity that cannot be completed within a single work shift. It also includes plumbing that requires disruption to the water supply of more than one patient care area (e.g. &gt;2 rooms) for more than 30 minutes but less than 1 hour.</td>
</tr>
<tr>
<td><strong>Type D</strong></td>
<td>Major demolition, construction and renovation projects. These include, but are not limited to, activities that involve heavy demolition or removal of a complete cabling system and new construction that requires consecutive work shifts to complete. It also includes plumbing that results in disruption to the water supply of more than one patient care area (e.g. &gt;2 rooms) for more than 1 hour.</td>
</tr>
</tbody>
</table>

Adapted from Health Canada guideline “*Construction-related Nosocomial Infections in Patients in Health Care Facilities*” July 2001

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Part B: Population and Geographical Risks Groups

<table>
<thead>
<tr>
<th>Group 1</th>
<th>Group 2</th>
<th>Group 3</th>
<th>Group 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lowest Risk</td>
<td>Medium Risk</td>
<td>Medium to High Risk</td>
<td>Highest Risk</td>
</tr>
<tr>
<td>Office areas</td>
<td>All other patient care areas</td>
<td>Day surgery</td>
<td>Oncology units</td>
</tr>
<tr>
<td>Unoccupied wards</td>
<td>unless stated in Group 3 or 4</td>
<td>Physiotherapy tank areas</td>
<td>and outpatient</td>
</tr>
<tr>
<td>Public areas</td>
<td>Outpatient clinics unless</td>
<td>Laboratories (specimens)</td>
<td>clinics for patients</td>
</tr>
<tr>
<td></td>
<td>stated in Group 3 or 4</td>
<td>General med/surg. wards other</td>
<td>with cancer</td>
</tr>
<tr>
<td></td>
<td>Admission/</td>
<td>than those listed in</td>
<td>Wards and outpatient</td>
</tr>
<tr>
<td></td>
<td>discharge units</td>
<td>Group 4</td>
<td>clinics for patients</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Geriatrics</td>
<td>with AIDS or other</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Long-term care</td>
<td>immunodeficiency</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Dialysis units</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>All endoscopy areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Pharmacy admixture</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>rooms</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Sterile processing</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>rooms</td>
</tr>
</tbody>
</table>

Part C: Construction Activity and Risk Group Matrix

A copy of the Risk Assessment and Preventive Measures Checklist must be sent to the Infection Prevention and Control Department when the matrix indicates that Class III and/or Class IV preventive measures are required (see shaded areas). Adaptations to the prevention measures can only be made after approval has been provided by the ICP. The ICP should also be consulted when construction activities need to be done on hallways adjacent to Class III and Class IV areas.

<table>
<thead>
<tr>
<th>Construction Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk Group</td>
</tr>
<tr>
<td>Group 1</td>
</tr>
<tr>
<td>Group 2</td>
</tr>
<tr>
<td>Group 3</td>
</tr>
<tr>
<td>Group 4</td>
</tr>
</tbody>
</table>

Adapted from Health Canada guideline “Construction-related Nosocomial Infections in Patients in Health Care Facilities” July 2001
Part D: Recommendations for Infection Control Preventive Measures

Class I

Engineer/Maintenance Staff and Contractors

a. Construction/Renovation Activities
   Dust Control*
   ▪ Immediately replace tiles displaced for visual inspection
   ▪ Vacuum work area

b. Plumbing Activities
   ▪ Schedule water interruptions during low activity (e.g. evenings if at all possible)
   ▪ Flush water lines prior to reuse
   ▪ Observe for discoloured water
   ▪ Ensure water temperature meets the standards set by the facility
   ▪ Ensure gaskets and items made of materials that support the growth of *Legionella* are not being used
   ▪ Ensure faucet aerators are not installed or used
   ▪ Maintain as dry an environment as possible and report any water leaks that occur to walls and substructures

Environmental Services

a. Plumbing Activities
   ▪ Report discoloured water and water leaks to maintenance and ICP

Medical/Nursing Staff

a. Construction/Renovation Activities
   Risk Reduction
   ▪ Minimize residents’ exposure to construction/renovation area

b. Plumbing Activities
   ▪ Report discoloured water and water leaks to maintenance and ICP

*Note: Class II specifications must be followed if dust will be created during the Type A construction activity.

Date: ___________________________  Signatures: ___________________________
__________________________________________________________

Adapted from Health Canada guideline “*Construction-related Nosocomial Infections in Patients in Health Care Facilities*” July 2001

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Class II  *The following specifications are to be considered in addition to Class I*

**Engineer/Maintenance Staff and Contractors**

a)  *Construction/Renovation Activities*

1. Dust Control
   - Execute work by methods that minimize dust generation from construction or renovation activities (e.g. wet mop and/or vacuum as necessary)
   - Provide active means to minimize dust generation and migration into the atmosphere
     - Use drop sheets to control dust
     - Control dust by water misting work surfaces while cutting
     - Seal windows and unused doors with duct tape
     - Seal air vents in construction/renovation area
     - Place dust mat at entrance to and exit from work areas

2. Ventilation
   - Disable the ventilation system in the construction/renovation area until the project is complete
   - Monitor need to change and/or clean filters in construction/renovation area

3. Debris Removal and Clean-up
   - Contain debris in covered containers or cover with a moistened sheet before transporting for disposal

b)  *Plumbing Activities*

   - Avoid collection tanks and long pipes that allow water to stagnate
   - Consider hyperchlorinating or superheating stagnant potable water (especially if *Legionella* is already present in potable water supply)

**Environmental Services**

a)  *Construction/Renovation Activities*

   Dust Control
   - Wet mop and vacuum area with a HEPA filtered vacuum as needed and when work is complete
   - Wipe horizontal work surfaces with a disinfectant

Adapted from Health Canada guideline “*Construction-related Nosocomial Infections in Patients in Health Care Facilities*” July 2001

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Medical/Nursing Staff

a) Construction/Renovation Activities
   Risk Reduction
   - Identify high risk residents who may need to be temporarily moved away from the construction zone
   - Ensure that resident care equipment and supplies are protected from dust exposure

Date: ________________________  Signatures: ________________________

__________________________  __________________________
Class III  *The following specifications are to be considered in addition to Class I and Class II*

Engineer/Maintenance Staff and Contractors

a) *Construction/Renovation Activities*

1. **Risk Reduction**
   - Ensure that ICP consultation has been completed and infection prevention and control measures have been approved

2. **Dust Control**
   - Erect an impermeable dust barrier from true ceiling (includes area above false ceilings) to the floor consisting of two layers of 6 mil Polyethylene or Sheetrock
   - Ensure that windows, doors, plumbing penetrations, electrical outlets and intake and exhaust vents are properly sealed with plastic and duct taped within the construction/renovation area
   - Vacuum air ducts and spaces above ceilings if necessary
   - Ensure that construction workers wear protective clothing that is removed each time they leave the construction site before going into patient care areas
   - Do not remove dust barrier until the project is complete and the area has been cleaned thoroughly and inspected
   - Remove dust barrier carefully to minimize spreading dust and other debris particles associated with the construction project

3. **Ventilation**
   - Maintain negative pressure within construction zone by using portable HEPA equipped air filtration units
   - Ensure air is exhausted directly outside and away from intake vents or filtered through a HEPA filter before being recirculated
   - Ensure ventilation system is functioning properly and is cleaned if contaminated by soil or dust after construction or renovation project is complete

b) *Plumbing Activities*
   - Flush water lines at construction or renovation site and adjacent resident care areas before residents are readmitted

Adapted from Health Canada guideline *“Construction-related Nosocomial Infections in Patients in Health Care Facilities”* July 2001
Environmental Services

a) Construction/Renovation Activities
   ▪ Increase frequency of cleaning in areas adjacent to the construction zone while the project is underway
   ▪ In collaboration with ICP, ensure that construction zone is thoroughly cleaned when work is complete

Infection Prevention and Control Personnel

a) Construction/Renovation Activities
   1. Risk Reduction
      ▪ Move high-risk residents who are in or adjacent to the construction area
      ▪ In collaboration with environmental services ensure that construction zone is thoroughly cleaned when work is complete
      ▪ Inspect dust barriers
   2. Traffic Control
      ▪ In collaboration with the facility project manager designate a traffic pattern for construction workers that avoids resident care areas and a traffic pattern for clean or sterile supplies and equipment that avoids the construction area

b) Plumbing Activities
   ▪ Consider hyperchlorinating or superheating stagnant potable water (especially if Legionella is already present in potable water supply)

Medical/Nursing Staff

a) Construction/Renovation Activities
   Risk Reduction
   ▪ Move high-risk residents who are in or adjacent to the construction area
   ▪ Ensure that residents do not go near the construction area
   ▪ In collaboration with environmental services and ICP ensure that construction zone is thoroughly cleaned when work is complete

Date: ____________________  Signatures: ____________________

____________________  ____________________

Adapted from Health Canada guideline “Construction-related Nosocomial Infections in Patients in Health Care Facilities” July 2001
Class IV  The following specifications are to be considered in addition to those in Class I, II and III

Engineer/Maintenance Staff and Contractors

a) Construction/Renovation Activities

1. Dust Control
   - Before starting the construction project, erect an impermeable dust barrier that also has an anteroom
   - Place a walk-off mat outside the anteroom in resident care areas and inside the anteroom to trap dust from the workers’ shoes, equipment and debris that leaves the construction zone
   - Ensure that construction workers leave the construction zone through the anteroom so they can be vacuumed with a HEPA filtered vacuum cleaner before leaving the work site; or that they wear cloth or paper coveralls that are removed each time they leave the work site
   - Direct all personnel entering the construction zone to wear shoe covers
   - Ensure that construction workers change the shoe covers each time they leave the work site
   - Repair holes in walls within eight hours or seal them temporarily

2. Ventilation
   - Ensure negative pressure is maintained within the anteroom and construction zone
   - Ensure ventilation systems are working properly in adjacent areas
   - Review ventilation system requirements in the construction area with ICP to ensure system is appropriate and is functioning properly

3. Evaluation
   - Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project

b) Plumbing Activities
   - If there are concerns about Legionella, consider hyperchlorinating stagnant potable water or superheating and flushing all distal sites before restoring or repressurizing the water system

Adapted from Health Canada guideline “Construction-related Nosocomial Infections in Patients in Health Care Facilities” July 2001
Environmental Services

a) Construction/Renovation Activities

Evaluation
- Review infection prevention and control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project

Infection Prevention and Control Personnel

a) Construction/Renovation Activities

1. Risk Reduction
- Regularly visit the construction site to ensure that preventive measures are being followed. Wear coveralls and shoe covers when visiting the site

2. Evaluation
- Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project

b) Plumbing Activities
- If there are concerns about Legionella, consider hyperchlorinating stagnant potable water or superheating and flushing all distal sites before restoring or repressurizing the water system

Medical/Nursing Staff

Staff are not allowed to visit the construction site.

a) Construction/Renovation Activities

Evaluation
- Review infection control measures with other members of the planning team or delegate to evaluate their effectiveness and identify problems at the end of the construction project

b) Plumbing Activities
- Consider using another source of potable water for residents who are at greatest risk until potable water has been cleared for signs of Legionella after major plumbing installation/repairs

Date: ____________________ Signatures: ____________________

Adapted from Health Canada guideline “Construction-related Nosocomial Infections in Patients in Health Care Facilities” July 2001