Interior Health
INFECTION PREVENTION & CONTROL

IPAC PREVENTATIVE MEASURES TOOL

January 2025

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For more information contact IPAC@interiorhealth.ca

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Infection Prevention and Control Preventative Measures Tool

This form is completed by the multi-disciplinary team (MDT) or designated person(s) to identify the required Preventative measures for the activity described in Form 1 ***Infection Control Risk Assessment and Preventative Measures Analysis.***

All CSA standards identified below refer to CSA Z317.13:22 *Infection control during construction, renovation, and maintenance of healthcare facilities*. The tool below is not an exhaustive list of Preventative measures: for new construction in a new location, an existing detached location, or existing connected location, refer to CSA Z317.13:22, Section 8: *Infection prevention and control measures for new construction projects*; for complete details of all Preventative measures refer to CSA Z317.13:22.

Project Name	**Location**
Scope of Work (Brief Summary):	
Project start date:	**Estimated Duration:**

Mark X in the check boxes to identify the appropriate preventative measures for your project.

Item	Level		1.0 Preventative Measures – Before Construction	Project MDT or Designate Responsible	Comments
1.1	All	☐	The Project Manager shall identify essential services (e.g., water supply, electricity, and ventilation systems) that could be disrupted and appropriate measures to address the disruption. This info shall be communicated to health care workers responsible for affected patients. [CSA: 7.2.2.1].		
1.2	All	☐	Identify high-risk patients who might need to be temporarily moved away from the construction area. [CSA: 7.2.2.3]		
1.3	II-IV	☐	Determine a safe route for the transportation of clean or sterile supplies and equipment away from the construction area. [CSA 7.2.3.1, 7.3.3.8]		
1.4	II-IV	☐	Establish traffic patterns for construction workers that avoid patient care areas. [CSA 7.2.3.1, 7.3.3.8]		
1.5	II-IV	☐	Minimize exhaust output from elevators serving construction areas to ensure that construction dust is not re-circulated into the healthcare facility. [CSA 7.2.3.1]		
1.6	II-IV	☐	Designate an elevator for use exclusively by construction workers. [CSA 7.2.3.1]		
1.7	II-IV	☐	Confirm water temperature standards for the healthcare facility. [CSA 7.2.3.1]		

Item	Level		1.0 Preventative Measures – Before Construction	Project MDT or Designate Responsible	Comments
1.8	II-IV	☐	Determine whether domestic cold, hot, and recirculation water lines will be affected by the construction. This assessment shall include: 1. Identifying plumbing lines that will need to be: a. Shut off or interrupted using existing valves; or b. Isolated by additional valves. [CSA 7.2.2.2] 2. Determining the method to be used to flush or disinfect the water lines before occupancy, accordance with Clause 6.7.8 and [CSA Z317.1:21]		
1.9	II-IV	☐	Drawings shall be obtained that show the layout of the ventilation systems that supply air to, or exhaust air from, the work area. The project plan shall state whether it is necessary to close outlets, modify performance, shut down systems or make other changes to the HVAC system. [CSA:7.2.3.2]		
1.10	III-IV	☐	Plan for regular monitoring and develop a process for issuing and documenting a Stop Work Order (see Appendix B).		

Item	Level		2.0 Preventative Measures – During Construction	Project MDT or Designate Responsible	Comment
Dust Control					
2.1.	All	☐	Immediately after Type A activity (e.g., visual inspection) has been completed, close access panels, replace displaced tiles, clean work area with a HEPA-filtered vacuum cleaner. See Clause 6.6.3.6 for HEPA leak test requirements. [CSA 7.3.1.1]	Project Manager/ Contractors/ FME	
2.2.	All	☐	Patient care equipment and supplies are relocated or protected from dust exposure. [CSA 7.3.1.5]	Health Care Providers	
2.3.	II-IV	☐	Place a walk-off mat outside the entrance to the construction area to trap dust from the equipment and footwear of personnel leaving the area. [CSA 7.3.2.2(h)] Walk-off mats shall be of sufficient size to ensure that constructors must place both feet on the mat at least once on exiting the construction area and vacuumed (with a HEPA filter-equipped vacuum cleaner) or replaced daily and when visibly soiled. [CSA 6.6.1.9]	Project Manager/ Contractors/ FME	
2.4.	II-IV	☐	Use drop sheets [CSA 7.3.2.2(a)]	Project Manager/ Contractors/ FME	
2.5.	II-IV	☐	Control dust by water-misting work surfaces while cutting. *Note: Caution should be exercised when such techniques are used on cellulose or fibre-based materials that are intended to stay in place following construction work.* [CSA 7.3.2.2(d)]	Project Manager/ Contractors/ FME	
2.6.	II-IV	☐	Seal windows and unused doors. [CSA 7.3.2.2(e)]	Project Manager/ Contractors/ FME	
2.7.	II-IV	☐	Seal plumbing penetrations, electrical outlets, and any other sources of potential air leaks in the construction area. [CSA 7.3.2.2(f)]	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures – During Construction	Project MDT or Designate Responsible	Comment
2.8.	II-IV	☐	Seal air supply and return ducts in the construction area. [CSA 7.3.2.2(g)]	Project Manager/ Contractors/ FME	
2.9.	II-IV	☐	Incorporate dust capturing attachments to the hose of the HEPA vacuum.	Project Manager/ Contractors/ FME	
2.10.	III-IV	☐	Barrier Walls: A) Erect an impermeable dust barrier, from the floor to the underside of the deck (including the areas above false ceilings) consisting of two layers of 0.15 mm (6 mil) fire-retardant polyethylene (or an equivalent barrier accepted by the MDT) and gypsum wallboard protective layer. The polyethylene membrane shall be present under all circumstances to maintain the required pressurization. Fire retardant polyethylene shall be used for exposed surfaces. The surface closest to the hospital zone shall be wipeable. The dust barrier shall remain in place until the project is complete, and the area has been cleaned thoroughly and inspected. After construction has been completed, the dust barrier shall be removed in such a manner to prevent the spread of dust and other debris particles adhering to the barrier (HEPA vac and damp wiping of surfaces first). [CSA 7.3.3.2.1(a)] Or	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures – During Construction	Project MDT or Designate Responsible	Comment
			B) Use impermeable temporary containment units constructed to contain contaminants that have a monolithic (one-piece) exterior shell constructed of a minimum of 0.20 mm (8mil) fibre-reinforced, fire-retardant polyethylene (or an equivalent barrier). The construction of the containment unit shall allow for containment of contaminants within the vessel and have ports through which HEPA-filtered vacuum cleaners or portable construction air handling units (CAHUs) can be easily attached to draw the unit under negative pressure. [CSA 7.3.3.2.1(c] If ceiling tiles are not removed as part of the project, they shall be protected with a polyethylene barrier or cleaned with a HEPA vacuum at project completion. Where deemed appropriate by the MDT, the composition of the dust barrier may be modified to suit time, space, or impact constraints. [CSA 7.3.3.2.2]		
2.11.	III-IV	☐	HEPA vacuum mechanical and electrical systems and spaces above drop or false ceilings, if necessary. [CSA 7.3.3.2.1]	Project Manager/ Contractors/ FME	
2.12.	III-IV	☐	Measures to ensure that contaminants from the construction site are not transferred to patient care areas on workers' clothing: 1) Workers routed away from patient care areas; 2) Use of protective clothing while in construction areas that is removed before entering patient care areas, or 3) Don protective clothing when entering patient care areas. [CSA 7.3.3.2.3]	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.13.	IV	☐	Ensure that all access be from outside the occupied areas of the healthcare facility, or construct anterooms at access points to the construction area if access is from within the healthcare facility. [CSA 7.3.4.2, 7.3.4.3(a)]	Project Manager/ Contractors/ FME	
2.14.	IV	☐	Place a walk-off mat outside and inside the anteroom to trap dust from equipment, debris, and the footwear of personnel leaving the construction area. [CSA 7.3.4.3(b)]	Project Manager/ Contractors/ FME	
2.15.	IV	☐	Ensure that all workers leave the construction area through the anteroom so that they can be vacuumed with a HEPA filter-equipped vacuum cleaner before leaving; or wear protective clothing that is to be removed each time they leave the construction area and before going into patient care areas. [CSA 7.3.4.3(c)]	Project Manager/ Contractors/ FME	
2.16.	IV	☐	Repair holes in walls or breaches in the containment system immediately when found. [CSA 7.3.4.3(e)]	Project Manager/ Contractors/ FME	
2.17.	IV	☐	Carefully remove barrier walls and use short term protection to minimize environmental contamination during removal. [CSA 7.3.4.3(g)]	Project Manager/ Contractors/ FME	
Ventilation					
2.18.	II	☐	If possible, the ventilation system should be disabled until the project has been completed. If not possible, an engineering analysis shall be performed to ensure that the fan systems are performing as intended to maintain relative pressurization and exhaust contaminated air, and that the operation of the HVAC system is not compromised. [CSA7.3.2.3.1, 7.3.2.3.2]	Project Manager/ Contractors/ FME	
2.19.	III-IV	☐	The main facility system shall be verified for operation in accordance with design during construction work. [CSA 7.3.3.5]	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.20.	III-IV	☐	Ensure that the facility's permanent ventilation system is functioning properly and is cleaned if contaminated by soil, dust, or moisture after construction is complete. [CSA 7.3.3.3.1]	Project Manager/ Contractors/ FME	
2.21.	III-IV	☐	The healthcare facility and constructor shall verify the pressure relationships for critical areas near the construction area (e.g., Population Risk Group 4 areas). [CSA 7.3.3.5]	Project Manager/ Contractors/ FME	
2.22.	III-IV	☐	Ensure that the air is exhausted directly outside and away from intake vents and filtered through a HEPA filter. In conditions that prohibit exhausting to the outside, air may be re-circulated in accordance with CSA [Clause 7.3.3.6,6.6.3.1] or as determined by the MDT (see Items 2.26 - 2.30 below).	Project Manager/ Contractors/ FME	
2.23.	III-IV	☐	When planning projects in facilities with operable windows that may be used for exhausting construction air, consider adjacent rooms, and lock windows so that construction air is not reintroduced to the building.		
2.24.	III-IV	☐	In cases where air cannot be exhausted directly outside, exhaust air may be temporarily ducted to the building exhaust system if an engineering analysis has been performed by qualified personnel to ensure that exhaust air will not be re-entrained into the occupied building and the MDT approves temporary ducting to the exhaust system. [CSA 7.3.3.6.2]. **Note:** This applies to situations where air is *ducted into permanent air handling system from CAHU's*. See 2.27 for situations where the permanent air handling system itself is used to exhaust air from construction site.	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.25.	III-IV	☐	Permanent air handling systems should not be used for exhausting air from construction or renovation work areas unless: a. The air handling system is an exhaust system leading directly to the outdoors (i.e. AIIR room; and b. An engineering analysis is performed to ensure that the exhaust system continues to perform its intended function and that the operation of the HVAC system is not compromised; and c. The operation of the exhaust fan is monitored and alarmed to building operations workers and alarmed in the construction zone. [CSA 7.3.3.6.3, 7.3.3.3.4] **Note:** This applies to situations where the permanent air handling itself is used to exhaust air from a construction site.	Project Manager/ Contractors/ FME	
2.26.	III-IV	☐	In cases where air cannot be exhausted directly outside or piped through the building exhaust system, it may be re-circulated into areas of the building occupied by Risk Group 1 or 2, if MDT approval is granted. Location and positioning of discharge should be taken into account, direction and velocity of air flow, and impact on relative pressurization and flow direction in areas supplied/adjacent. Discharged air impact should be continuously inspected through project duration [CSA 7.3.3.6.4]	Project Manager/ Contractors/ FME	
2.27.	III-IV	☐	Construction exhaust air shall not be re-circulated into building areas occupied by Risk Group 3 or 4 [CSA 7.3.3.6.4, 6.6.1.7]. Refer to use of permanent exhaust in Item 2.27 above. See Item 2.30 below for use of plenum	Project Manager/ Contractors/ FME	

			boxes for recirculation.		
Item	**Level**		**2.0 Preventative Measures - During Construction**	**Responsibility**	**Comments**
2.28.	III-IV	☐	If approved by the MDT to use a plenum box for exhausting construction air, after all other options have been considered, follow the guidelines indicated in the Plenum Box Position Statement, and document rationale for use. (See Appendix C of the ICRA and Preventative Measures Toolkit).	Project Manager/ Contractors/ FME	
2.29.	III-IV	☐	Measures related to re-circulated air shall require approval from the MDT and include arranging on-site and in-place performance leak- testing of construction air handling units (CAHUs). [CSA 6.6.1.7]	Project Manager/ Contractors/ FME	
2.30.	III-IV	☐	Use portable HEPA filter equipped CAHUs that include pressure gauges and an alarm, according to [CSA 6.6]	Project Manager/ Contractors/ FME	
2.31.	III-IV	☐	CAHUs used for Preventative Measures III or IV shall be performance leak-tested and verified at the beginning of the project, except as provided in [Clause 6.6.4.4., 6.6.4.3]	Project Manager/ Contractors/ FME	
2.32.	III-IV	☐	HEPA filters and pre-filters for CAHUs shall be visually inspected, according to manufacturer's instructions, before installation and at least daily and their condition shall be documented. [6.6.3.3]	Project Manager/ Contractors/ FME	
2.33.	III-IV	☐	HEPA filters shall be replaced if airflow falls below the manufacturer's specified level; the unit fails a performance leak test; or the filter is visibly damaged, wet, or clogged. [CSA: 6.6.4.5, 7.3.3.3.1]	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.34.	III-IV	☐	Minimum negative air pressure of 7.5 Pa is monitored by a device that constantly displays the pressure differential between the construction area and occupied areas, continuously monitors and is connected to a local alarm, with pressure recorded daily. If the pressure is less than 7.5 Pa for more than four hours (cumulative over 24 hours), or less than 2.5 Pa for more than 90 seconds, the contractor will take immediate corrective actions to restore and maintain the required pressure differential. [CSA: 6.6.1.3, 7.3.3.3.2, 7.3.3.3.3, 7.3.4.5, 7.3.4.6]	Project Manager/ Contractors/ FME	
2.35.	IV	☐	Ensure that ventilation systems are working properly in adjacent areas. [CSA 7.3.4.3(f)]	Project Manager/ Contractors/ FME	
Plumbing					
2.36.	All	☐	Use gasket material that is smooth and does not promote buildup of biofilm and scale and replace gaskets if worn or rough. [CSA:7.3.1.2]	Project Manager/ Contractors/ FME	
2.37.	All	☐	Ensure that faucet aerators are not installed or used. [CSA:7.3.1.2, 6.7.5]	Project Manager/ Contractors/ FME	
2.38.	All	☐	Schedule water interruptions in advance and receive approval before starting. [CSA:7.3.1.2]	Project Manager/ Contractors/ FME	
2.39.	All	☐	Maintain a dry work environment and report any water leaks through walls or substructures. [CSA:7.3.1.2]	Project Manager/ Contractors/ FME	
2.40.	All	☐	Perform work during periods of low user activity (e.g., evenings). [CSA 7.3.1.3]	Project Manager/ Contractors/ FME	
2.41.	II-IV	☐	Avoid using collection tanks and long pipes (which allow water to stagnate). [CSA 7.3.2.4]	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.42.	II-IV	☐	After construction and immediately before occupancy, disinfect water systems in accordance with CSA Z317.13-22 and CSA Z317.1:21, as determined by the scope of work and the MDT. [CSA 6.7.8-6.7.10, 6.7.10, and 7.3.3.8]	Project Manager/ Contractors/ FME	
2.43.	IV	☐	Plumbing and HVAC systems shall be supplied, installed, and commissioned in accordance with CAN/CSA-Z317.1, CAN/CSA- Z317.2, and CAN/CSA-Z8001. [CSA 7.3.4.10]	Project Manager/ Contractors/ FME	
2.44.	All	☐	Report discolored water and water leaks to maintenance and infection prevention and control personnel. [CSA 6.7.10, 7.3.1.5]	Environmental Services/ Health Care Providers	
Site Maintenance					
2.45.	II-IV	☐	Place supplies and equipment in covered containers during transportation through the healthcare facility to prevent contamination in other areas. [CSA 7.3.2.5.1(c)] Wipe the wheels of mobile equipment, transport carts, and bins before entering occupied areas. [CSA 7.3.2.5.1(d)]. Equipment, carts, and bins should be clean before entering occupied areas.	Project Manager/ Contractors/ FME	
2.46.	II-IV	☐	Remove the debris in the evening when patients are in their rooms and visitors have left. If this is not possible, debris should be removed at the end of the workday. Exposure of the occupants of the healthcare facility to debris shall be minimized. [CSA 7.3.2.5.2]	Project Manager/ Contractors/ FME	
2.47.	II-IV	☐	Place debris in covered containers or cover it with a moistened sheet before transporting it for disposal [CSA 7.3.2.5.1(b)]. Containers should be clean before entering occupied areas.	Project Manager/ Contractors/ FME	

Item	Level		2.0 Preventative Measures - During Construction	Responsibility	Comments
2.48.	II-IV	☐	Clean the construction area with a HEPA filter-equipped vacuum cleaner, a wet mop, or both, as necessary and at least at the end of each day. [CSA 7.3.2.5.1(a)]	Project Manager/ Contractors/ FME	
2.49.	III-IV	☐	Construction area shall be terminally cleaned before occupancy of the space. Cleaning shall be performed by EVS using a procedure accepted by the MDT. [CSA 7.4.2.3]	Project Manager/MDT	
2.50.	III-IV	☐	Environmental services workers shall: a. Increase the frequency of cleaning in areas adjacent to the construction area while the project is underway; b. Wet mop and vacuum the area with a HEPA filter-equipped vacuum cleaner as necessary and when the work is complete (See Item 3.5 for Return to Service Cleaning); c. Wipe exposed surfaces with a hospital-grade disinfectant. [CSA 7.3.3.7.2]	Project Manager/ MDT/ Environmental Services	
2.51.	III-IV	☐	Constructors shall maintain cleanliness outside the work area. A HEPA filter-equipped vacuum cleaner shall be used every day or more frequently if necessary. [CSA 7.3.3.7.1]	Project Manager/ Contractors/ FME	
2.52.	III-IV	☐	A designated member of the MDT shall regularly visit (frequency determined by the MDT) the construction area to confirm Preventative measures are being followed, including inspecting the integrity of dust barriers, and document findings. Review at the regular meetings of the MDT). [CSA, 7.3.4.7, 7.3.4.8, 6.1.11]	Project Manager/ Contractors/ FME MDT	
2.53.	III-IV	☐	Ensure patients, health care providers, and visitors do not go into or through the construction area.	Health Care Providers	

Item	Level		3.0 Preventative Measures - After Construction	Responsibility	Comments
3.1.	All	☐	Environmental Services and health care providers shall report discoloured water and water leaks to the maintenance and infection prevention and control departments. [CSA 7.4.2.2(b)]	Environmental/ Services/ Health Care Providers	
3.2.	All	☐	The MDT shall review the Preventative measures that were undertaken and assess their effectiveness. [CSA 7.4.2.1]	Project Manager MDT	
3.3.	II-IV	☐	The MDT shall conduct a final inspection to ensure that the ventilation system is functioning properly in the construction area and adjacent areas. [CSA: 7.4.2.1]	Project Manager MDT	
3.4.	II-IV	☐	The constructor shall ensure that the construction area has been cleaned with a HEPA filter-equipped vacuum cleaner, a wet mop, or both, as necessary, and that horizontal work surfaces have been cleaned. [CSA 7.4.2.2 (a), 7.4.2.3]. For new construction projects, this is completed before hoarding is removed [8.3.2.5.6.4]. The need for additional facility environmental services Prior to hoarding removal will be determined by the MDT.	Environmental Services/ Health Care Providers	
3.5.	II-IV	☐	MDT shall ensure that the construction area has undergone “Return to Service Cleaning” before building occupants are allowed to occupy the new space. The cleaning shall be performed by the facility’s environmental services department or designated alternative cleaning contractor using a cleaning procedure approved by the MDT. [CSA 7.4.2.3]	Project Manager MDT	

Item	Level		3.0 Preventative Measures - After Construction	Responsibility	Comments
3.6.	IV	☐	Before patient or health care providers occupancy of the construction project work area is permitted, a project infection control work plan completion debrief shall be completed. If the commissioning process identifies any uncompleted work from the infection control plan, this shall be listed as a project deficiency. [CSA: 7.3.4.11]	Project Manager/ Contractors/ FME	
3.7.	IV	☐	The engineering or operations and maintenance workers or constructors shall ensure that the construction area is free of equipment and debris, including prevention of dust tracking from workers clothing and shoes [7.3.4.3]	Project Manager/ Contractors/ FME	
3.8.	IV	☐	Before the completed construction area is occupied, any parts of the infection control plan still in effect shall be reviewed by the MDT. If necessary, such parts shall be incorporated into the healthcare facility's ongoing operating policies and procedures. [CSA 7.4.3]	Project Manager MDT	
3.9.	IV	☐	Complete the post construction checklist (See Form 6).	Project Manager MDT	

Additional comments:	
Approval (print name and sign)	**Date**
Project Manager:	
Facilities Maintenance & Engineering:	
Contractor:	
Infection Control Professional:	
Clinical Representative:	
Other:	
Other:	

Effective Date	January 2025		
Partners Reviewed	Capital Planning and Procurement, P3 partners		
Last Reviewed			
Approved By	IPAC		
Owner	Infection Prevention and Control		
Revision History	Date	Section	Revision